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ANNUAL REPORT OF THE PRESIDENT OF THE SAN FRANCISCO BOARD OF HEALTH FOR YEAR ENDING JUNE 30, 1902.

Hon. Eugene E. Schmitz, Mayor City and County of San Francisco—Sir: The Department of Public Health of the City and County of San Francisco has the honor to present for your consideration its annual report for the fiscal year terminating on this date.

The annual reports for the fiscal years 1898-99 and 1899-1900 have, after much vexatious delay, been finally placed in print in the form of a biennial edition, and as soon as they leave the hands of the binder will be ready for distribution. The annual report for the fiscal year 1900-01 has also been printed and will be placed in circulation immediately after its receipt at this office. The Board of Health regrets that these reports will appear unaccompanied by the maps and charts which have been prepared for insertion in the different volumes. It has been reported to this board that, although the Finance Committee of the Board of Supervisors has expressed its willingness to provide sufficient funds for the printing of said maps and charts, your Honor has declined to approve of the expenditure, and a certain daily paper published in this city has quoted your Honor to the effect that the non-issuance of the reports for the two fiscal years preceding the last is a proof of incompetence on the part of the Board of Health. If the fact that the Board of Supervisors failed to provide in the budgets of said fiscal years for the printing of such reports can be charged as incompetence against the Board of Health, then the Board of Health pleads guilty. Furthermore, if the failure of this department to issue its monthly bulletin during the fiscal year 1900-01, for the reason that no appropriation was available for such purpose, is additional evidence of incompetence, the Board of Health pleads guilty to a second count.

Your attention is particularly invited to those sections of the present report prepared by the health officer, chief sanitary inspector, chief plumbing inspector, as well as the other chiefs of bureaus and heads of departments. Careful examination of the information contained therein will indicate to one who is willing to be instructed the character and amount of work being accomplished under the direction of this board, and will further serve to demonstrate that the department of public health is conducted for purposes other than the protection of political pets and the extravagant and unnecessary expenditure of municipal funds.

During the past year much official business has been transacted with the Board of Supervisors, the Board of Public Works, the Board of Education, the Police Department, and the Civil Service Commission, as well as other divisions of the city government. All dealings have been conducted without serious differences, and at present writing this department appears to exist in harmony with all branches of the municipality, except the mayor's office. Your Honor has probably not forgotten that on March 25, 1902, without previous warning of intention, an order emanated from the mayor's office peremptorily removing those members of the Board of Health who were appointed by your Honor's predecessor and substituting therefor certain persons of your Honor's own selection. The alleged reason for such action was duly elaborated in the letter of dismissal sent to each member of this board who had been marked for official decapitation, and, in no instance, did any member of this board receive the notice of his deposal from office until after the new appointees had effected an artificial organization.

In the letter of dismissal, your Honor bases action upon the "thorough and searching investigations" said to have been conducted by your Honor. So far as this department is concerned, it would appear as if said "investigations" were either visionary or entirely ex-parte. It will be remembered that shortly after the induction of your Honor into office, the members of this board called to present their official respects, and, at that time, in response to a request to visit and inspect the operations of this department, your Honor stated that such was your intention. The members of the Board of Health undoubtedly entertain ideas which differ from those of your Honor in regard to the definition of the term "investigations," but these need not be discussed at length in this report. There is no evidence, however, that your Honor has ever visited the Health Office since assuming the duties of mayor, except in one individual instance, when, supported by your Honor's attorney and accompanied by the gentlemen comprising the so-called new Board of Health and a staff of newspaper representatives, you invaded the rooms of the department for the purpose of taking possession thereof and installing in office the said so-called new Board of Health.

There is no evidence to show that your Honor ever asked any member of the Board of Health or any responsible officer connected therewith any question whatever regarding the existence of bubonic plague in San Francisco, nor does it appear that your Honor has ever sought to examine the records in the Health Office for such facts as might be presented on the subject, excepting on one occasion, when you sent for a transcript of the report in a case of plague which had been discovered by federal officers and was by them reported to this department. Notwithstanding the failure or neglect, on the part of your Honor, to have submitted for use in your "investigations" the records on file in this office, you assigned as a reason for the dismissal of this board the following:—

> "It is evident from recent instances and developments, one as late as February 21, 1902, that you are absolutely and unchangeably committed to the policy of maintaining, harboring, and proclaiming this baseless bubonic plague situation; that you are proceeding, even at this late day, upon the theory that every case investigated is a suspicious case, and that every such case must be assumed to be, and published as, a true case of bubonic plague until the contrary is so clearly established by overwhelming evidence that the true disease can no longer be concealed under the mask of the bubonic plague. This policy is one of irreparable injury to the people, whose protectors you are supposed to be; it is against the welfare and prosperity of the city, and is, in my opinion, ample and abundant justification for your removal."

Your Honor can hardly fail to be aware that the findings of the Board of Health in the matter of plague are exactly identical with those of the United States Marine Hospital Service, officially recorded at Washington. You have been interviewed at length by the representative of that arm of the federal government on duty in this city, and certainly must have a full understanding of the situation as it is viewed by the United States authorities. Moreover, it does not appear in perfect accord with consistency, when an effort is made to eliminate from a body municipal the members of a commission who have rendered themselves obnoxious because of their opinions relative to the existence of plague, that among those selected to fill the vacancies so created, there should be one who is himself committed to the same doctrine, and who has, in the past, exhibited his fearlessness with regard to public reproach by reporting a case of plague under its proper name, and whose diagnosis was verified by both federal and local officers. It may be that the gentleman in question has been chosen on account of his knowledge of the subject; if so, there is no doubt that, when he assumes the duties of his office, his mere presence will be a guarantee that no attempt to suppress the truth will be entertained.

Your Honor prefaces the letter of dismissal addressed to this board as follows: "The action thus taken by me is not unmixed with regret, on account of the personality of the officials removed; but, in the interest of the city of San Francisco, and, indeed, of the whole state of California, and actuated and animated by a profound realization of the serious duties imposed upon me, I see my way clear in no other course." The members of the Board of Health feel flattered that their "personality" is considered to be of such a character that the premeditated act of expulsion arouses regret on the part of the removing power, but they fail to see why such regret should be awakened in the face of the charges urged against them in this letter. Does it appear reasonable that any sympathy should be tendered persons whose offenses are enumerated as will appear below?

> "Following is the cause for which you are removed: to wit, Continued injury and injustice to the people of the city of San Francisco and of the state of California, and to their commercial and financial interest, in declaring, proclaiming, and publishing under your official sanction, and without proper foundation or justification in fact, that bubonic plague exists in San Francisco, and that it has existed therein since March 6, 1900.
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> "For three months past I have carefully examined and investigated all accessible reports and records, and have personally inquired into numerous specific cases reported and declared by you, and under your authority, to have been cases of bubonic plague, and I am unalterab convinced that, notwithstanding your declaration and publications, bubonic plague has not existed and does not exist in San Francisco."

Assuming that your Honor believes the allegations charged in your letter of dismissal to be founded on fact, the members of the Board of Health consider that, in the further interest of consistency, it is neither meet nor fitting that persons guilty of the offenses recited should be deemed worthy of the diaphanous courtesy of an expressed regret. On the contrary, their removal from office should be a source of self-gratulation to all true exponents of municipal imperialism and a well-deserved relief to the community which has been afflicted with their presence.

The Board of Health fully realizes that one high in official station may, through excess of enthusiasm or by reason of unwise counsel, perpetrate errors which are less deserving of censure than of pity. When such a breach of judgment is committed, it becomes the duty of those, who, by virtue of longer experience, are possessed of an intimate knowledge of the truth, to inaugurate a course of instruction which may serve to enlighten others who may be laboring under the difficulties due to a misapprehension of actual conditions. With this idea in mind, the members of the Board of Health naturally decided to delay, if possible, the action of your Honor in bringing about their dismissal from office.

On the day following the issuance of the edict of removal, the Board of Health made application for an injunction, which was issued by the Honorable Carroll Cook, presiding judge of the Superior Court. This injunction restrained your Honor, your attorney, and all other persons, from interfering with, opposing, resisting, or preventing the members of this board or their employees from discharging their official duties. It further prohibits your Honor from molesting or disturbing or harrassing any of the members of this board, or any of the employees thereof, in performing, carrying out, or executing any of the orders of the Board of Health, or from intruding into the rooms or offices of the Board of Health.

The hearing of argument on a motion brought by the appointees of your Honor to dismiss the injunction took place before Honorable M. C. Sloss, in Department 8 of the Superior Court. Several days were consumed by the attorneys representing both sides of the case, and the judge rendered his decision May 19. In this decision Judge Sloss announced that no court in equity has jurisdiction where the question of possession of public office is concerned, and the text of the decision is herewith quoted. (See "Occidental Medical Times" for June, 1902, page 243.)

On May 27, by permission of Attorney-General Tirey L. Ford, quo warranto proceedings were instituted, as suggested in the opinion of Judge Sloss, by one F. T. Finch, said to be a clerk in the office of your Honor's attorney. The prayer of the complaint read as follows:—

> "That it be decreed that said defendants have no right, title, or interest whatsoever, and that neither nor any of them has any right, title, or interest whatsoever in or to said offices of members of said Board of Health, but that defendants and each and every of them wrongfully and unlawfully usurp, intrude into, hold, and exercise said offices; and that it be adjudged that said defendants and each of them are guilty of usurping, intruding into, and unlawfully holding said offices, respectively.
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> "That it be decreed that said T. A. Rottanzi, J. C. Stinson, M. E. Van Meter, and A. S. Adler are the duly-appointed and qualified members of said Board of Health, and that they be awarded the possession and enjoyment of said offices.
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> "That plaintiffs be awarded the cost of suit herein, and such other and further relief as may be meet and just in the premises."

This case has been assigned by Presiding Judge Cook to his own department, but as yet has not come up for final hearing.

The Board of Health has not lacked encouragement and support throughout the difficulties which have been thrust upon it. Resolutions of confidence have been adopted by the San Francisco Medical Society, by the Medical Society of the State of California, and by various other bodies of a similar character in other states, all of such support and confidence being unsolicited and unexpected by this board.

There is no intention on the part of the members of the board to direct unjust criticism at the acts of your Honor, which have been referred to in the foregoing. We believe it to be our duty, however, to present such facts as will serve to show the fallacy of the assertions made against us, supplemented by such comments as may tend to emphasize the stability of our position.

If your Honor will consult the last two annual reports issued by this department, a brief statement will be found in each, setting forth the circumstances attendant on the presence of plague in San Francisco, coupled with references to some of the more notorious efforts which have been made to suppress the truth. Nothwithstanding your Honor's assertion that you "have carefully examined and investigated all accessible reports and records" relating to plague, you are again reminded that the reports and records on file in the Health Office, as well as those in possession of the Marine Hospital Service, have not as yet been consulted by you, and these reports and records are not only accessible, but constitute the only original, true, and exact evidence of the existence of the disease.

In summing up the result of your Honor's investigation, you have neglected to mention the report of the Federal Commission on this subject, which was issued as an official bulletin by the United States Treasury Department, and has been accepted as an authoritative opinion by all who possess sufficient intelligence to appreciate the standing of the members of the commission and the character of the investigation conducted by them. Your Honor has also omitted to note the reports of medical men from Honolulu, on file in the Health Office, or the report of the Health Officer of British Columbia, who spent several weeks in San Francisco, conducting an investigation, which, although it might not be qualified as "thorough," was sufficiently satisfactory to the government which he represented. Your Honor has also failed to make reference to the report of Dr. H. L. Ryfkogel, of this city, formerly bacteriologist of the State Board of Health, whose report was suppressed by the board under which he served, and who was deposed from his position by order of the Governor, and was further refused payment for the services he performed, all of which occurred because he had found plague and had sufficient courage to declare it in spite of executive displeasure.

In your letter of dismissal, your Honor states that the "united press of the city intelligently and patriotically ascertained for itself the true facts of the bubonic plague situation, and refrained from giving undeserved and undue publicity to your reports." At this point it will be well to refer to a pamphlet, sent forth from the state printing office, which reflects most vividly the intelligence and patriotism of the united press, as well as similar qualifications exemplified by the State Board of Health. This pamphlet bears the title, "Report of the Special Health Commissioners appointed by the Governor to confer with the Federal authorities at Washington respecting the alleged existence of bubonic plague in California, also report of State Board of Health." It contains the findings of a delegation of distinguished citizens sent to Washington by his Excellency, the Governor of the state, for the purpose of conveying the promises of his Excellency to refrain from interference with Federal officers, and to take such steps as would convince the Federal government that California would no longer neglect precautions which were deemed necessary by reason of the result of the investigations of the Federal commission.

The purpose of the "Report" is palpably one of deception. Its contents add nothing whatever to scientific information, and its conclusions contribute still less to veracity. A superficial narrative is given detailing the progress of the inspection and cleansing of the Chinese quarter carried out by the state at the dictation of the Federal government. Particular stress is laid upon the fact that no cases of plague were found during the course of this work, wherefore it is argued by the Special Health Commissioners that, this being so, there could not possibly have been any plague in San Francisco prior to the commencement of the inspection. Great praise is accorded the Governor for the position he has maintained during the controversy, and insinuations are made that the Federal and local authorities showed an inclination to engage in questionable methods with a view to keep up the impression that plague was present in the city. The cost of the inspection is referred to, and much credit taken on the ground that it was conducted expeditiously and economically. The State Board of Health is complimented for disregarding the recommendation of Dr. J. H. White as to the purchase of sulphur, bichlorid of mercury, etc., in large quantities, and the following startling assertion is made:—

> "Thus the work of disinfecting and fumigation was thoroughly performed with 300 pounds of sulphur, although the Marine Hospital Service estimated that 30 tons would be necessary."

In its summary the State Board of Health claims to have fumigated about 30,000,000 cubic feet of dwelling apartments, and, according to the Special Health Commission, this was accomplished with only 300 pounds of sulphur.

The closing portion of this report reads as follows:—

> "In conclusion, your Committee desires to express the opinion that the result of the steps taken by you has been to wholly disprove the allegation that bubonic plague has existed in San Francisco. Had the same precautions been taken before April 8, 1901, that were adopted after that date, we should not have been menaced with quarantine, nor would we have had imposed upon us the expenditure of a large sum of money, every dollar of which was extorted by the necessity of warding off the evil consequences of the false reports concerning the health of the city and state. There can be no reasonable doubt that the autopsies made prior to April 8, 1901, would have had the same result as those made after that date had there been present doctors who were not interested in creating the impression that San Francisco was plague infected. The fact that no plague has been found since April 8, 1901, and the further fact that the disease, although it was alleged to have made its appearance on March 6, 1900, did not become epidemic, and that no two cases of what was termed bubonic plague appeared in the same house, should carry conviction to every candid mind that San Francisco is and has been absolutely free from the disease, and that those who said it existed were either mistaken or deliberately misrepresented the facts."

Having thus split an infinitive and addressed the Governor, the commissioners append their names in the following order:—

> "John P. Young,
> Wm. F. Herrin,
> T. T. Williams,
> H. T. Scott,
> Commissioners.
> Fremont Older,
> Commissioner of the city of San Francisco and of the state."

Mr. Williams, however, not unmindful of the fact that the newspaper represented by him had up to that time been consistently and steadfastly a supporter of the truth in regard to plague, appears to be somewhat coy in his apostasy, and qualifies his position as a signer of the document, using this language:—

> "In signing the above report I desire to express the opinion that in the earlier reports of the existence of plague the mayor and Board of Health and other officials of San Francisco were sincere in their beliefs that the reports of physicians that the plague was here were true. I am of the opinion, however, that later on the judgment of the Board of Health became corrupted by its dislike to confessing mistake and by its desire of proving that its erroneous conclusions were justifiable.
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> "Certainly no blame should attach to officials for taking precautions against disease, which excellent authority declared existed. At the same time no excuse should be made for physicians and others who attempted to palm off as plague diseases of a non-contagious character. T. T. Williams.
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> "Conference Committee: W. J. Martin, Hugh Hume."

The Board of Health can now vouch that, since Mr. Williams became converted and burnt his bridges behind him, there is no reason for his new associates to find fault with the vigor displayed by him in assaulting the principles which he formerly supported, if certain editorials appearing in his paper can be credited either to his pen or his influence.

The appendix to the report of the commission contains copies of different telegrams and letters bearing upon the relations between Federal and state authorities. These communications constitute interesting reading, and give a fair idea of the position assumed by each side, but otherwise call for no particular comment.

The report of the State Board of Health on the disinfecting, cleaning, and fumigating of Chinatown completes the pamphlet. In this a brief account is given of the system adopted and the work accomplished. With the exception of the fumigation of 30,000,000 cubic feet of space with 300 pounds of sulphur, there is no cause for technical criticism. Running, nevertheless, throughout the entire report is an undercurrent of insinuation touching the presumed anxiety of the representatives of the Marine Hospital Service to declare all suspicious deaths in the Chinese quarter to be the result of bubonic plague. Several sarcastic allusions are made with regard to the methods said to have been employed by the officers of that service and of this Board of Health. A bare-faced attempt to subvert the truth is made by introducing, in the body of the report, a statement by the bacteriologist of the State Board of Health, purporting to give his findings in the cases of three Japanese girls who died at 845 Washington Street. These cases were pronounced plague by the Marine Hospital Service, by this department, and by independent observers. The bacteriologist of the State Board of Health, however, finds that the deaths were caused by septicemia hemorrhagica, but he does not mention, nor does the report of the State Board of Health allude to, the fact that a fourth girl, residing at the same place, who was suffering from a disease with clinical symptoms corresponding to those of the others, was taken in charge by employees of the State Board of Health, by right of a law passed at the last session of the Legislature, and by them treated with injections of the Yersin serum. This girl recovered, and, as the Yersin serum is recognized by indisputable authority to be a specific remedy for plague, there must have been good and sufficient cause in the opinion of the State Board of Health for the use of such serum.

The State Board of Health agrees with the Special Health Commission that plague has never existed in San Francisco, and addresses the Governor in these words:—

> "At the conclusion of the work, as thorough and searching as it could possibly be made, no case of bubonic plague was found, nor was any indication of its having been there discovered. If plague had existed just prior to this sanitary investigation, it would have been there during the months of April, May, and June, because no efforts had been made to suppress it, and no precautions taken to prevent its spread.
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> "It is safe, therefore, to say that the evil reports of the presence of that disease in San Francisco were based upon error in diagnosis upon the part of incompetent investigators. We take great pleasure in assuring you that plague does not exist in San Francisco, and that it never has had lodgment there, nor elsewhere in California."

If your Honor please, the Board of Health of the city and county of San Francisco concedes the personal merit of the gentlemen comprising the Special Health Commission, and admits the value of the statistics presented by the State Board of Health, with the exception of those relating to plague, but it scarcely seems reasonable that a commission made up of editors, an attorney, and a manufacturer, no matter how distinguished, should possess the scientific qualifications which render their judgment in matters appertaining to any disease, and particularly plague, superior to that of a commission consisting of the leading bacteriologists of the United States, such as was the Federal Commission appointed by the Honorable Secretary of the Treasury, with the approval of President William McKinley. Furthermore, it does not seem compatible with common sense that the report of the Federal Commission, which is a matter of official record at Washington, and which has been issued as an official bulletin under authority of the Secretary of the Treasury, and which contains facts that are perfectly well known to the members of the Special Health Commission, should be rendered null and void by a report of a commission of laymen, even though it be reenforced by that of an intimidated State Board of Health and its subsidized supporters. This idea is evidently in line with that of the Honorable Secretary of the Treasury, who, in his last annual report to Congress, says:—

> "The existence of bubonic plague in San Francisco, which was first reported on March 8, 1900, and of which mention was made in the last annual report, was confirmed by a commission appointed by the Department, consisting of three bacteriologists, of the highest reputation, who had had no previous connection with government service. This commission reached San Francisco in February, 1901, and, after an exhaustive investigation, rendered a report so conclusive in its nature as to result in measures being taken to cleanse Chinatown, where the plague existed.
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> "In accordance with an agreement between the Department and the authorities of the state of California and city of San Francisco, the work of inspection, isolation, and disinfection in Chinatown, San Francisco, was carried on by a corps of physicians and employees of the state and city, under the advice and direction of a surgeon and a corps of assistants of the Marine Hospital Service.
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> "This work was completed on June 21, at which time 1,180 houses, containing 14,017 rooms, had been disinfected, the burden of expense falling upon the local and state authorities, the Treasury Department paying only the salaries and incidental expenses of its own officers. Since the completion of the work, a skeleton organization has been maintained for the purpose of making examinations of the sick and dead in Chinatown, and assisting, when requested, in the disinfection of premises where cases are found. The number of cases found from March 8, 1900, to July 1, 1901, was 34. Sixteen additional cases were reported between July 1 and November 15 of this year."

The Honorable Secretary of the Treasury apparently places more dependence upon his own commission than upon the commission appointed by the Governor of this state, notwithstanding the fact that the report of the latter, the Special Health Commission, was freely circulated, and must have been known to the Secretary before he filed his annual report to Congress.

Little need be said about the professional evidence secured by the Special Health Commission and the State Board of Health. It may be true that the influence of the commission has been potent in producing the testimony of medical men, subversive of truth and in contempt of medical ethics. It may be also true that there are physicians in public office who are sufficiently pliable to forget at will the duties of their calling and who obsequiously bow their heads in response to the dictum of a political power. It may likewise be true that when gifts of lucrative appointment or military title are held forth as inducements to depart from paths of professional rectitude, the bait is too alluring to meet with resistance on the part of some who yearn for the trappings of gilded pomp, or crave a little brief authority.

Your Honor has forcibly stated that the members of this board "are absolutely and unchangeably committed to the policy of maintaining, harboring, and proclaiming this baseless bubonic plague situation." We take issue, however, on the term "baseless," and insist, as we have insisted before, that the reports concerning this disease, which have been issued under our authority, are absolutely and incontrovertibly true, and upon their merits we are willing to stand trial or undergo an open investigation without fear or apprehension as to the outcome. The Board of Health now announces to you that since March 6, 1900, 57 cases of bubonic plague have been observed by this department, 23 of which have occurred during the fiscal year ending this date. The discussion of plague in this report is now closed.

It is hardly necessary to consume time or space in directing the attention of your Honor to special features which mark the progress of this department during the past year. Reference can be made, nevertheless, to the addition of the Park Hospital to the Emergency Service. This was made possible by the appropriation given for such purpose by the Board of Supervisors, and was effectively brought to a successful issue through the hearty cooperation of the Golden Gate Park Commission. Situated, as this hospital is, in a rapidly-growing district, its advantages to the neighborhood will be fully appreciated.

The prospects for satisfactory work, under direction of this board, for the coming fiscal year, appear favorable. The Board of Supervisors has made liberal allowance in the budget for this department in all its branches. The members of this board regret exceedingly that your Honor saw fit to exercise the veto power upon so many of the very important items provided for this department in the annual appropriation, but we view with satisfaction and pleasure the recent action of the Board of Supervisors in permitting the budget to remain unmutilated. We feel confident that, had your Honor possessed a more intimate acquaintance with the actual work of the Department of Public Health, and had not listened so willingly to its detractors, your veto might not have been applied so freely.

The Board of Health takes additional pleasure in considering that a new city and county hospital has at last come within the range of possibilities, through the passage of the Curtis resolution, providing for a special tax. The Board of Supervisors deserves the unanimous thanks of the community for the adoption of this measure, and this board takes occasion to congratulate your Honor on the position you have maintained in this particular matter, and the earnestness which you have displayed in assisting to bring it to an ultimate certainty. Whatever differences may exist between your Honor and this department in regard to other subjects, the Board of Health does not hesitate to express its approval of any action that is worthy and commendable.

To conclude, it may not be amiss to state that, taking into consideration the attitude of the press in San Francisco, as well as that assumed by your Honor, it is difficult to determine whether membership on the Board of Health of this city and county is to be looked upon as a crime or as a joke. If it be the latter, the sooner the charter is amended so as to permit of the appointment of editors and professional politicians to such membership, the sooner will the city be safeguarded from the dangers which threaten it through the misdirected efforts of medical men who persistently decline to have their opinions manufactured to order. If it be a crime, information should be filed with the Grand Jury which will tend to bring about the indictment of the criminals and their subsequent obliteration from the official community.

Respectfully submitted,
John M. Williamson,
President Board of Health.

ADDRESS DELIVERED BEFORE STUDENTS OF THE UNIVERSITY OF CALIFORNIA AT THE OPENING OF THE SESSION OF 1902.

By Harry M. Sherman, A. M., M. D., Professor of Surgery, University of California.

I am glad it has fallen to my lot to welcome the class at this the beginning of another school year. For the faculty

I do extend to you of the class a hearty welcome. Many of you are old friends to us, for we have struggled through one, two, or three years together, and know each other. It is always a pleasure to welcome old "companions at arms," and that may not be considered an inappropriate term when we think of the contest that we are waging and in which you are preparing to join us.

To you, members of the upper classes, who have fought the fight of the preceding years and who now come back to take your place again in the ranks and continue your work, I offer congratulations for your success in the past, and express the confident hope that you have come to repeat that success. By now you have gotten a clear idea of the magnitude of the task you have undertaken. Scientific medicine no longer stands in your minds as a sphinx among the different branches of science; you have compassed part of its extent, and can, with reliance born of that accomplishment, press strongly on. But perhaps you have gotten something more than this—perhaps you have gotten a clearer impression of yourselves in relation to the task, and, if you have, you will, in the year or years to come, be able to make better use of yourselves, and to get out of your mental and physical machinery better results than before. This will be a gain of no insignificant size, and will be of distinct benefit, not only to yourselves, but also to the school of which you are a part.

I do not know that the particular thing of which I wish to speak to-day will so much affect you, for you are, by the very fact of your seniority, fairly well established in your habits of study and work, and could not very well change, even for a better method than you may already have, without a certain amount of detriment. But I do wish to point out to you particularly that you have now to set the pace for the whole school; your work must be the model, in its industry and completeness, for all, and you must, to do this, keep high ideals always in your mind. Nor must you fail to remember that a pace has been set for you in your turn, that the class which immediately preceded you has, in a test outside the school, made a record below which you must not, when your time comes, fall a single jot. This school will never be satisfied with any class which does not keep up to the standard of the class which graduated last year. That is the pace that has been set for you.

To the lower classmen, and especially to the men of the first year's class, I want to speak a little differently. Those of you who are now just beginning probably have as many different ideas of what it is to study medicine as there are different brains among you. Of all the branches of scientific study and practice, there is none so little understood by the laity—and you are, even yet, only laymen—as is medicine. A man not trained as an engineer will look at a bridge and endeavor, with a fair measure of success, to appreciate the reasons for the special distribution of its parts and the way in which it is designed to bear the weight to be put upon it. A man who is not a mechanical engineer will not hesitate to try to repair a broken machine, trusting that his ordinary common sense will tell him how the parts are intended to work, and how they should go together. Furthermore, if you were to go to them with a story of an improbability concerning a bridge or a machine, they would be apt to at once suspect you of romancing, or might even be able to put a finger on the very point where you passed from fact to fiction. But these same people, whom you would find in a reasonable mental attitude regarding mechanical or other forms of engineering, regarding business matters, regarding governmental policies, regarding scientific or ordinary matters in general, have a bearing towards medicine that is often only difficult to reconcile with anything else they do, say, or think. Because it deals with the workings of the body, which are ordinarily hidden from view, it is seemingly regarded as an almost occult subject, and those who practice it are oftentimes popularly endowed with a knowledge which all men might not acquire. Instead of approaching this subject as they would any other scientific question, they approach it in a mental state which easily makes them the dupes of any who try to deceive, and if you were to tell to them improbable stories of physiologic or pathologic matters, and on them base absurd romances of what could be done by medicine, you would find always ready listeners and eager believers, listeners who would measure what you said by no standard of experience or common sense, nor even by the standard learned in collateral scientific study, and believers, the limits of whose credulity have never yet been reached. Do not resent it if I consider that you are of these. These are the people, and you come to us from them.

And what are you going to find the study of medicine really to be? And having found out what it seems to you to be, how are you going to work at it?

Briefly put, the study of medicine is simply the study of the structure, arrangement, and function in health of all the parts of the body, and the changes in structure and function of the same parts in disease. It goes on then to the study of the evidences which can reach us on the outside of the perverted functions and the underlying changes of structure on the inside; and, still further, to the means which we have to modify and control these conditions. The first part of this you can at once see is a matter of observation and record. You look and see, and write down your observations. Fact after fact is added as you go on, until finally you have an accumulation of facts, the knowledge of which is a fairly clear concept of physical man as he is known to-day. Memory is the mental faculty here occupied. In the second part you are called on to use your judgment and reason. The evidences which a sick man presents of his sickness have to be considered and judged. Those which are pertinent are accepted and classified; the rest are rejected. On the accepted evidence, as outward and visible signs, you base a reasonable argument or statement of the inward physical condition, and then decide on the plans to modify or control that condition. This is, I take it, a fair statement of what is the study of scientific medicine; and it does not differ in the least from the study of any other branch of science. In all the same methods are followed: the accumulation and classification of facts, the induction from these facts of the laws or principles controlling them, or the elaboration of an hypothesis to explain their relation. This is what you will, I think, find the study of medicine to be if you try it.

Now, how are you going to try it? Every man who studies anything at all uses his memory more or less, his judgment some, and his reason to a certain degree. These three faculties you must use, but some men act as if they really tried to use only the first, the memory, and are in a position of little children the moment they are asked to think for themselves, or to do more than repeat, parrot-wise, a lesson taught. And even of those who can and do think, who do reason about the subject matter which is presented to them, many do it in a lame, halting way because of inaccurate ideas of the fundamental facts and of the interrelation of these facts; and to all the concept of physical man, sound or sick, is confused and blurred. It takes something more than mere memory to keep clear ideas in the mind of intricate matters. A vivid imagination, the power to reproduce in their entirety impressions which have been received, is a practical prerequisite for this act. Of course you understand that I use the term imagination in its actual sense and not in the loose way in which it is used ordinarily. The need and value of this faculty of imagination in scientific matters can be attested by many witnesses. Tyndall, in an essay on the "Scientific Use of the Imagination," says, "With accurate experiment and observation to work upon, imagination becomes the architect of physical theory. Newton's passage from a falling apple to a falling moon was an act of the prepared imagination, without which the 'laws of Kepler' could never have been traced to their foundation. Out of the facts of chemistry the constructive imagination of Dalton formed the atomic theory. Davy was richly endowed with the imaginative faculty, while with Faraday its exercise was incessant, preceding, accompanying, and guiding all his experiments." Maudsley says of imagination that "it performs the initial and essential functions in every branch of human development," and Sir William Hamilton that it "is as indispensable a condition of success in the abstract sciences as in the poetical and plastic arts."

I can not help thinking that to no students of science is a vivid imagination more important than to the student of anatomy, physiology, and pathology. All of our ideas of the intimate or minute anatomy of the tissues are formed by the study of small pieces of them under the microscope; and from what we see on a flat surface in the field of the microscope, we have, by imagination, to construct an idea of the tissue in three dimensions. Modern optical instruments can show us some parts of a tissue in true perspection, but for this to be done surrounding parts must be removed, and in our mental picture of the tissue these parts must, by imagination, be restored. Even in grosser anatomy the same faculty has a share. To think accurately of a given organ it must be vividly pictured to the mind as lying in its proper place, of its proper size, shape, color, and texture, and with its proper environment. This can only be done by the imagination. In physiology still more must be done by the imagination than in anatomy. The organs are few that can be watched at work. Oftentimes a process can be studied in its various stages, but only by stopping the working, and studying what has, up to then, been acomplished; and, finally, an idea of the entire process can only be gotten by the imagination holding up to our mental view a composite of the different stages. No man who has not a good faculty of mental reproduction, well trained by previous scientific work, can begin even to picture to himself the simplest physiologic act. The passage of a leucocyte through the wall of a blood-vessel, its wanderings, vagrant and seemingly aimless, through the tissues, its sudden appreciation of a foe, of danger for the commonwealth of which it is a part, its rush on an invading bacterial hose, its loss of life in the contest,—all of these acts will be but a series of words for him who can not follow it in thought, whose imagination can not be a replica of that of Metchnikoff when he coined the word "phagocyte." In pathology it is the same, end products are studied, and the process is, to a large extent, imagined. Year by year, by all possible methods of experimentation, bit by bit, new facts are learned of the various steps of pathologic processes, and the part that imagination has to supply is much less, but in regard to no organ is our knowledge complete, never can we describe a process all of which has been observed. And as you proceed to the practice of the art of medicine, and go out to heal the sick, you have, in the making a diagnosis by the bedside of a patient, to imagine the exact condition of his diseased organs. Guided primarily by the knowledge of the normal anatomy and function of the organs, and secondarily by the evidence of their ill working, you make a mental picture which shall conform to all requirements of medical science, but which shall be, within these facts, purely an act of the imagination.

Is it not reasonable to believe that he who has the clearest mental vision will see most accurately and deeply into these always obscure and often intricate matters? Is it not worth while, then, to train that faculty which will give this vision? Have we not welcomed eagerly those rays which give us only shadows of these things unseen, to help our imaginations make more truthful pictures? In a recent paper read before a national association the writer points out the comparative uselessness of a knowledge based on memory alone, a knowledge which is merely a remembering of lists of words, of tables of classification, of groups of symptoms, of records of other men's experiences. The escape from that is partly by the path I have indicated, the training of a scientific imagination, which can be done in some measure by every one, in a great measure by many, and in a high measure by not a few. Such an imagination, controlled by the inexorable logic of known facts, will clarify many a hazy conception into a distinct picture, and mark out a plan of action in the premises which shall be like a plain path, easy to follow, difficult to lose. And when you have once followed such a path through a difficult case, and it has brought you and your patient to the place where you would be, you will appreciate to the full the value of the faculty you have trained, the new sense that has been given you.

Of course you have, each one of you, begun this, but probably unconsciously; what I have said is to urge that you do it now consciously and conscientiously. Recall to mind, as vividly as possible, again and again, the microscopic and macroscopic picture of the tissues, the shapes of the organs and their mutual relations; try to get an idea of them at work; imagine the processes as they go on in your own bodies as a means of practicing this kind of clairvoyance. All of the facts to be taught will come to you in a natural order; think of them never out of that order, so that it shall be as impossible to think of one fact without also thinking of its immediate fellows as it is impossible to think of five without having easily at hand the thought of four and six. Memorize, memorize—but memorize facts in natural sequence, not list of words.

I know that this is the proper way to study and to think. If I can make that known to you, I shall have helped you more to-day, and taught you more, than I shall in all the other hours we are destined to pass together in this school.

FROM ETHER TO THE PHYSIOLOGIC UNIT.

By George Adam, M. D.

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What is ether? Our answer is that it is the simplest form of matter; that there are four forms mutually complimentary. They are named, in the order of their density, solids, liquids, gases, and ether. If ether is matter, it must be molecular, and must have a chemistry. The subject of ether may be conveniently divided as follows: (1) Atomic ether—electricity; (2) molecular ether: (a) interstellar ether, (b) intermolecular ether, —ether between the molecules of ponderable matter; (3) immolecular ether, —constituent units of ponderable molecules.

Electricity Is the Chemistry of Ether.—Adopting as hypotheses the postulates that ether is matter, and that electricity is its chemistry, we will follow wherever they may lead. Electric facts will bear us out in stating that the ether molecule is composed of two atoms, which may be named positive and negative units. Here, then, are units of matter representing units of the fundamental principles of force. We will formulate the conceptions that the positive unit of matter is identical with the unit principle of attraction or concentrativeness; that the negative unit of matter is identical with the unit principle of repulsion or diffusibility; that the combination of these units forms the zero of force, and that they unite under the universal principle of the tendency of all matter or all force to equilibrate. Their union in the ether state of matter is electric zero or complete neutralization; the separation of the ether units is electric potential; and the phenomena of both conditions constitute electricity, in the broadest sense of the term. It follows that the forces of the ether molecule are immolecularly satisfied, that the mutual neutralization of the units is complete within the molecule. The subject of electricity will be dismissed by stating that, on the bases of our hypotheses, we are prepared to explain all electric facts, and here we will briefly discuss the properties and absence of properties of the ether molecule.*

The great law of force is a modification of Newton's law of gravitation, and is as follows: All forces react in direct proportion to the product of their quantities, and in inverse proportion to the square of their distance asunder. This law recognizes repulsion as well as attraction, an important differentiation from Newton's law. Newton's law is incorrect in that it implies that the attraction of gravitation is indentical with mass. The two atoms constituting the molecule of ether being in contact, the factor of distance is eliminated when considering the action of extrinsic forces on ether. Consequently we find that ether is without weight or gravitating force, without cohesion, and without a number of the potential properties of other matter. Because of the minuteness of its molecule, ether mechanically is incompressible, escaping through other matter as water through a sieve. Nevertheless, the ether molecule, assuming the globular form by its intrinsic forces, is distorted—polarized—in the induced magnetic fields of electric and chemic potentials. The ether mass is elastic by virtue of the globular form of its molecules, and it is capable of propagating vibrations by its molecular impenetrability and molecular contact. Ether can not originate vibrations, because it has no molecular potential. Ether offers no resistance to bodies passing through it, as it has no weight and no frictional properties. For the same reason it can not be projected like a cannon ball; it may, however, form vortices around an electric current, being acted upon by the current through the inherent attraction and repulsion of its molecular units. In the latter case the positive ether unit circulates in one direction and the negative ether unit in the opposite. The immolecular neutralization of the unit forces of ether is only disturbed by a greater extrinsic force, in accordance with the law of forces as above stated.

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* The purpose of this article is the consideration of certain physiologic phenomena, and it will not enter into the details of conclusions arrived at on electric, chemic, nor physical subjects. The author, in following his hypothesis, has found that the laws of attraction and repulsion, that of gravitation, and those concerning other properties of matter, have been incorrectly stated, and that conclusions from Avogadro's law, those concerning the origin of light and heat, and their relationship to electricity, have been based upon misconceptions of the fundamental conditions of matter. These, the many problems concerning electric currents, the problems of the Roentgen and analogous rays, those of certain physiologic phenomena not here considered, and of fundamental pathologic conditions manifested as hysteria, neurasthenia, epilepsy, etc., have been considered in articles not yet published, and the author believes solved on the bases of the fundamental hypotheses.

Ether is not a conductor of electricity, because the attractions and repulsions within its molecule are fully satisfied, and the free atoms of ether,—electricity,—do not adhere to the surface of the ether molecule, at least they do not do so in the presence of unneutralized or ponderable matter. Intermolecular ether forms a physical equilibrium with other matter. It is the medium of manifestation of heat and light, and, when polarized, is capable of propagating sound. A body without weight, but having molecular impenetrability and elasticity, will propagate vibratory waves or undulations with the least possible resistance. A slight resistance may be offered by its immolecular forces to the distortion of its molecule by a vibratory blow. It is possible that, if freed from the interference of the vibratory action of ponderable matter taking place on the earth's surface, interplanetary communication may be rendered practicable. As we ascend, the atmosphere is rarified, the intermolecular spaces become larger, there is more intermolecular ether and less interference on the part of ponderable matter. As we only recognize the presence of matter by its unneutralized properties, and as the forces of the ether molecule are intrinsically neutralized, our senses are not disturbed by the presence of ether, except inasmuch as it is the medium of propagation of the forces of other matter.

Ether fills all space not occupied by other matter. It is interstellar and intermolecular. Moreover, its atoms or units are immolecular—form the constituent units of ponderable molecules. Molecules are of different sizes, varying from the ether molecule, containing two units, to organic molecules, containing trillions of ether units. The ether molecule, positive and negative electrifications, and the first variations of molecules of ponderable matter from the simplicity of the ether molecular construction are shown in the following formulæ:—

$\begin{matrix}+\\-\end{matrix}$	$+$	$-$
Ether molecule.	Positive electrification.	Negative electrification.

$\begin{matrix}++\\-\end{matrix}$	$\begin{matrix}--\\+\end{matrix}$
Positive primary condensation of matter.	Negative primary condensation of matter.

Each molecule of the primary condensations is equal in potential to a free ether-unit of electric potential. By further condensation, accompanied with various reactions between positive and negative chemical elements, molecules of electro-negative character, such as oxygen, and others of electro-positive character, such as potassium, may be constructed. Thus it is clear that the potential of a complex molecule of ponderable matter, as manifested by chemic action, rests on the same fundamental basis as electric potential, i. e., the properties of unneutralized ether-units, and that chemic and electric potentials are fundamentally identical. These primary condensations of matter have been measured in the Crooke's tube.* From recorded experiments I have calculated that a hydrogen molecule consists of 6,000 ether units, and from the chemic and physical character of hydrogen I have estimated that these units are divided into 5,500 positivities and 500 negativities. Having found the constituency of hydrogen, there is no difficulty in obtaining that of the molecules of other substances. Having identified chemic potential with electric potential, we have only to study the latter to arrive at correct conclusions as regards the character of the phenomena of the former.

A Concept of a Molecule.—What is a molecule of ponderable matter? It is the physical unit. When not contorted by extraneous forces, it assumes the globular form, its units being drawn towards a common center by its immolecular forces. It possesses the property of differentiating its poles. Its potential of unneutralized ether-units—the difference between the sum of its positivities and the sum of its negativities—is represented in a surrounding induced magnetic tridimensional field, which is its free or vibratory space. The potentials of complex molecules differ quantitatively and qualitatively, depending on the number and quality, positivity or negativity, of unneutralized ether units. Having differentiated poles, there must be immolecular distances between the majority of the positivities and the majority of negativities; that is to say, each positive unit is not completely in contact with a corresponding negative unit, as in the case of the units of the ether molecules. These distances are important factors in the neutralization of the forces of complex molecules, and allow the earth's forces,—gravitation,—or the potential of adjoining molecules,—chemic action, osmosis, diffusion,—to take possession of the intrinsic forces of a molecule. There are no free interspaces within the molecule. Molecules have the property of polarization; by this is meant that all their poles of a kind point in one direction. This phenomenon is best illustrated by crystallization, which is caused by a movement of the intermolecular ether towards the surface of the liquid. When a molecule polarizes, it must have equipotential hemispheres. If the relative numbers of the positivities and negativities of the molecule prohibit the hemispheres from becoming equipotential on polarizing, it either imbibes molecules of polarization, as in crystallization—water, alcohol, etc., of crystallization—or it extrudes molecules of polarization, as manifested in certain physiologic phenomena, such as cell-division, amœboid movements, etc. The former may be called *associated molecules of polarization* and the latter *dissociated molecules of polarization.* It is not too much to say that, on the bases of our primary hypotheses, all electrical, chemical, and physical facts, including those of light and heat, and the laws governing them, can be made plain.

From the foregoing we will carry forward three fundamental properties of complex molecules. They are as follows: (1) *Molecular potential,* depending on number, quality, and relative placement of the unit-constituents of the molecules and on the character of the opposing or neutralizing force; (2) *molecular induced magnetic field;* and (3) *molecular polarization.* They are associated with and in a large measure essential to electric, chemic, and physical actions, and we believe that they are of equal impor-

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*Article by Professor Thompson, *Popular Science Monthly*, August, 1901.

tance as factors in the production of physiologic phenomena.

The Molecular Concept of the Physiologic Unit.—It is conceivable that two or more molecules can be compressed into one, the sum of the inductive potentials of the primary molecules being represented in a common induced magnetic field. Under certain degrees of pressure and ether-energy molecules may be built up to an indefinite maximum number of chemic atoms, each atom being a group of units which, as a group, has no distinct entity in the molecular construction, the immolecular units being in absolute contact, and being more or less mutually neutralized. Thus, physiologists have estimated that some molecules contain 2,000 chemic atoms. It is clear that the limit to the size of the molecule is indefinite, depending on the equilibrium of matter, and it is possible that under physiologic conditions a molecule may exist which can be seen and examined by means of the microscope, or even handled as an ordinary mass. Bearing in mind that a molecule is the physical unit; that it is composed of an indefinite number of ether units, which vary in relative proportions of positivities and negativities, differing in relative placement; that its potential is represented by induction in an environing magnetic field; that it has the property of assuming differential poles; and that within its construction there are no units nor groups of units,—atoms,—which can be characterized as a molecule or submolecule, then the concept that the physiologic unit is a molecule can be formulated. That the nucleoli of animal cells, the anisotropic substance of muscles, the analogous unit in conducting nerve tissue, etc., are molecules of inductive negative potential, with all the properties of the physical unit, is readily conceivable when the above definition of a molecule is accepted. If it can be shown that the physiologic unit is surrounded by an induced magnetic field, the molecular condition of the unit is proven. A mass composed of molecules has no induced field, as the inductive potential of each molecule is fully represented in its own induced field. It follows that a mass is a body composed of molecules, but it is possible that there are molecules which are larger than some masses. In the induced field of small molecules ether is the polarized element, as no other is so molecularly minute as to be capable of filling the intermolecular spaces. In the induced fields of large molecules, and in those of electrically-charged masses, ponderable molecules are polarized. Consequently there is found in the induced magnetic field of the anisotropic substance of the muscle and in the induced magnetic fields,—the nuclei,—of all nucleoli, molecules of ponderable matter, which are polarized by the inductive potential of the primary force resident in these bodies.

The potential of nucleoli and of all physiologic units is of negative quality. The fact of the stimulated or leading-off point of a muscle becoming negative is only explainable on this hypothesis, and with this hypothesis the mass of electro-neural facts is consistent. The molecular conception of the physiologic unit renders possible the explanation of muscular, neural, gland-cell, and electric-cell action. The details of the phenomena of fecundation, cell-division, cell-movements, and osmosis fully accord with the fundamental properties of the molecule and physiologic unit as defined.

Commencing with the same histological unit or molecule,—the neuro-musculo-electro-glandular cell or disc, fundamentally constructed on the same plan, —a molecule of high potential,—nature stretches the units in line and makes use of their property of conductivity; she places others in tiers, compresses or distorts them by an elastic sheath, and for her purposes calls forth the common property of all matter, under certain conditions, of assuming the spherical form, and she has contractility; she arranges them in pile form, places them within a circuit, and, behold, she has an electric current; or by modification of arrangement, from the ions produced as the result of molecular polarization, she constructs a molecule of extreme potential, an anabolism. In all of this nature uses a molecule of high potential, polarizable by the stimulus of a central nervous organization. When the molecule or cell is polarized, whether there is manifested the property of conduction by vibrations; whether a physical movement of the body is accomplished; whether the shock from an electric organ is felt; or whether a cell of the blood emerges from a gland loaded with potential, depends on the placement, connections, and surrounding conditions, and not upon an alteration of principle in the polarizable molecule or cell of high potential.

Relationship of the Anisotropic to the Isotropic Substance.—Polarization is evidently the important fundamental principle of contractility. The polarization of the ether molecule is rendered possible by ether having no frictional properties, consequently an ether molecule has perfect freedom in the modification of its form. The polarization of an ordinary molecule of ponderable matter is made possible by its being surrounded by intermolecular ether, thus giving the molecule a free vibratory field. The environing conditions of the anisotropic substances are equally plain. The anisotropic substance is imbedded in the more fluid isotropic substance, giving the former perfect freedom as regards polarization and modification of its distorted form,—distorted by the elastic sheath. The isotropic substance fills up the free vibratory space of the polarizing anisotropic substance, and occupies a position analogous to intermolecular ether in the latter's relationship to a vibratory ponderable molecule. But the isotropic substance possesses other functions. It supplies the anisotropic substance with associated molecules of polarization, an essentiality to the accomplishment of polarization or contractility, just as the water of crystallization is to the crystallization of certain salts. They are associated on polarization and dissociated on depolarization, their molecular condition being left intact.

What are the molecules of association, which are necessary to the polarization of the anisotropic substance, and therefore to contractility?—They probably consist of calcium, sodium, or other soluble salts, and may be different for voluntary and involuntary muscles. For the cardiac muscle sodium chlorid may be the associating molecule of polarization. Under a slight stimulus the anisotropic molecule polarizes; the associated molecule of polarization is drawn within the anisotropic sphere; the hemispheres become symmetrical; the molecule rounds out into a true globular form; it is under a condition of strain; the elasticity of the sheath is overcome; the muscle becomes round, hard, and tense—contracts. The transformation of force is as follows: Histological molecules or cells are polarized by an initiatory exciting force and by their inherent potential, the latter being the greater and more important. This is force spent, and results in the decomposition of the molecules absorbed as nutrition into ions. The polarized physiologic units consequently must have lost in potential, that is, in the number of atoms in their construction. Independently, therefore, of the molecules of polarization ions must be given off from the constituencies of the polarized cells or molecules at the moment of depolarization. These probably form carbon dioxid and water, or carbon dioxid alone. Accordingly, the function of the isotropic substance is important. It furnishes the associated molecules of polarization to the anisotropic substance, and also furnishes molecules to build up the anisotropic substance after the latter has lost potential by polarization. The latter is a nutritive process, and is accomplished by the law of equipotential surfaces. The nutritive elements are associated as molecules and dissociated as ions. Consequently the function of the isotropic substance is threefold: It forms the vibratory space of the anisotropic substance, holds in solution associated molecules of polarization, and is a storehouse of nutrition.

Generally the principle of the transformation of force connected with functional activity of nerve, muscle, gland, and other histologic cells or molecules, is the splitting up of molecules into ions; these ions, combining in simple forms of molecules, set free energy—ether from the polarized induced fields of higher chemic potentials—the freed energy radiating as heat or circulating as electricity; or, under favorable conditions of pressure and temperature, the ions with the energy may be stored in other molecules or cells. The latter takes place in glands, especially in the thyroid. The function of this gland being to build up molecules (globulins of the blood) in potential, these, like ships, unload at distant ports. Specifically, the physiologic unit or molecule takes on CO_2 or H_2CO_3 as molecular nutriment, and at the moment of depolarization these are freed as ions, at the positive pole carbon and hydrogen, and at the negative pole oxygen, the differentiated results depending on the environment of the physiological unit.

Trophic Nerves and Gland-Molecules. —The nerves which supply the glandular structure are efferent. Being such, in what way do they differ from motor nerves? There is no reason to suppose that in structure and in the character of the impulse conveyed they differ from other efferent nerves. Moreover, the secreting elements of a gland and the contracting elements of a muscle may be histogenetically identical. Again, if all efferent nerves convey the same impulses, the summations of these impulses in the muscles and in the glands may have a common principle. There is reason to believe that all efferent nerves produce their differential effects through the common principle of polarization of the histologic or molecular elements of the structure acted upon. Microscopic work conducted recently indicates that the secretory nerve fibers terminate in a plexus between and around the epithelial cells, from which it may be inferred that the gland-cells are acted upon directly by nerve impulses. These nerve impulses must polarize the gland-cells, and during polarization certain positive and negative elements are eliminated from the cell-body or histologic molecule. The character of these elementary ions may be judged from the character of the cell structural elements. These elements may be considered as $+HCPNO-$ The most negative element, oxygen, will appear at the negative pole of the cell-body, and the most positive elements, hydrogen and carbon, at the positive pole. In fact, the cell will act exactly as if it were part of the exciting nerve, and the polarization of the nerve tissue and of the gland-cell tissue will in no way differ, only in the larger chemic and physical effects produced on the part of the latter. Neither will polarization of the gland-cells differ from polarization of the muscle-cells, only in those differential results arising from the fact of the muscle-cells undergoing distortion and compression previous to polarization, and in the sequential physiologic and chemic facts depending upon different environment.

The result, then, of nerve action on the gland-cells is dissociation of certain positive and negative atoms from the structure of the cell-body. The ions eliminated are in the nascent state and will take one of the following courses: 1. They may combine and form simple compounds. 2. They may react on salts that may be present. 3. By anabolism they may be incorporated into carbohydrates, or proteid bodies or molecules. The course will be influenced by the character of the proximate material and by the degree of pressure to be overcome in the metabolic change. If the gland-cell is bathed in a solution of sodium chlorid, the following reactions will take place: $(Na\ Cl)_2 + 3O + C + 2H = Na_2CO_2 + (H\ Cl)_2$. The above formulae will explain the presence of hydrochloric acid in the stomach during digestion. If the same gland-cell be placed in the liver and surrounded by glycogen, the reactions will be as follows: $C_6H_{10}O_5 + 3O + C + 2H = C_6\ H_{12}\ O_6 + CO_2$. The CO_2 is held loosely in combination with the secretion of the liver, and the glucose is taken up by the blood. If the gland-cell is surrounded by proteids, under the proper degree of pressure, the ions, carbon, hydrogen, and oxygen are forced into the molecule of the proteid, and the glyco-proteid mucin is formed. The formed material of shells, nails, and bones are produced by CO, being ionized by nerve action, and the ions uniting with the calcium of the blood. It is clear that anabolism taking place in a gland will be modified by the intensity of nerve action, number of ions, by the character of the substance derived from the blood which is acted upon by the ions, and by the degree of pressure within the gland. The factors modifying pressure are number of ions, arterial tension, and rigidity of the connective tissue of the gland. If a nucleo-proteid is placed within the gland, and the pressure regulated by the structure of the gland, and the temperature by nerve action, clearly the ions will be forced into the molecular construction of the nucleo-proteid. Thus ptyalin, pepsin, trypsin, and other enzymes may be produced by a slight differentiated action resulting from a modification of one or more of the above factors. Obviously the nervous system has two distinct functions in connection with glandular action. It regulates the amount of blood reaching the gland by means of the sympathetic, and modifies the elements of the blood passing through the gland by means of the cerebral nerve, the modification being produced by ions, the result of nerve action, which are incorporated into the molecular construction of the blood-elements present in the gland, thus raising their potential.

The Spermatozoon and the Ovum.—Flint refers to a memoir by Lott, containing observations on the behavior of spermatozoa in the presence of electric currents and under the microscope. It was shown by the experiments of Lott that in the part of the field where the current was strong, the moving spermatozoa were carried along with it toward the cathode; but when the current was comparatively feeble, the spermatozoa made their way against it toward the anode. In treating of the galvanic current passing through fluids, we find that oxygen in the molecule of water becomes electrified by the positive current, and is attracted towards the negative pole to the point of neutralization, and then by induction it immediately seeks the positive pole. Now, a critical examination will show that the fundamental principle governing Lott's experimental facts and those governing oxygen in the fluid are identical. Oxygen when charged positively will seek the negative pole, but when not charged, it will seek the positive pole by induction. In Lott's experiments the spermatozoids when under a strong current are electrically charged, and by virtue of the charge are carried towards the negative pole; but when very small currents are used, other material more minute and more easily moved is charged, and the spermatozoid, being of negative electric potential at the neck or head, as oxygen is electro-negative, moves by induction toward the positive pole. The ovum is carried along mechanically by the ciliary movement, and is directed by the charge on the free ends of the cilia, which is of positive electric character. The spermatozoa do not touch the cilia, but by induction seek the positive pole of the ciliary current, which is at the ovarian end of the Fallopian tube. They are directed entirely by the negative potential of the head or neck, which, like oxygen and other negatives, seeks the positive pole. The motive power of these bodies resides in the axial fiber, which is composed of molecules of negative potential (65 per cent negativity), which is stimulated by the positivity of an alkaline fluid; and this physiologic fact represents the principle of initiatory stimulus to respiratory and circulatory movements, i. e., the positivity of the blood serum in contact with the negative neural molecule, or physiologic unit, in the terminals of the afferent fibers of the pneumogastric. The spermatozoa and the ovum usually meet in the Fallopian tube near the ovarian end. The spermatozoa approach the ovum and surround it in large numbers. They lash their tails, and several may succeed in reaching the perivitelline space, but only one penetrates the substance of the ovum. The success of one causes the collapse of the others. The head of the successful one, now called the sperm-nucleus, separates from the tail and makes its way toward the center of the ovum. The egg-nucleus also moves toward the center, where the two meet and form the first segmentation-nucleus. The middle piece accompanies the head to the interior of the egg. What is the character of the attraction that exists between the spermatozoan and the ovum? Admittedly physiologists have not found a satisfactory answer. We believe that crystallization, coagulation, contractility, gland-cell action, electric-cell action, and conductivity depend upon molecular polarization, and it is probable that this fundamental property of all matter is an important factor in the relationship of the ovum and the spermatozoon. It must be distinctively borne in mind that neither the nucleolus of the ovum nor the centrosome of the sperm has been called into functional activity previous to their union. The part played by them has been entirely negative. They have been built up from the potential of environing structures, but separately neither is capable of performing their special function. That function fundamentally is simply to alternately polarize and depolarize, thus converting molecules into ions, and its specialization resides in environing conditions. It is seen that certain salts can not crystallize without the water of crystallization; that coagulation can not take place without the presence of calcium; and that muscular contraction—polarization of the anisotropic substance—is only effected in the presence of certain salts contained in the isotropic substance. Furthermore, it is probable that the common basis of these and other phenomena is polarization, and the essential additional molecular substance we have called associated molecules of polarization.

In short, the theory is here advanced that the relationship of the sperm-centrosome to the germ-nucleolus is identical with the relationship of the associated molecules of polarization to the polarizing body, or identical with the water of crystallization to the crystallizing substance. A study of the anatomical differentiation of the ovary and testicle leads us to believe that the nucleolus of the ovum towards the end of its anabolic period is nourished by carbon dioxid, CO_2, or hydrogen carbonate, H_2CO_3, whilst the nucleolus of the spermatozoon (sperm-centrosome) is nourished during the same period by calcium carbonate, C_2CO_3. Beginning with a common basic cell, nature therefore differentiates the sperm and the germ by means of these chemical substances.

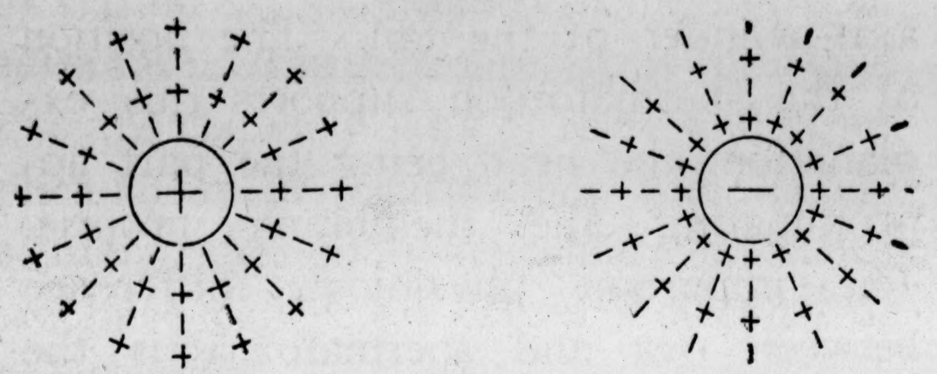
The ovarian nerves have been traced to the covering of the Graafian follicles. There being no physiologic reason for cerebro-spinal fibers terminating in the follicular theca, it is reasonable to conclude that fine twigs penetrate the envelope of the follicles and terminate in contact with the cells of the membrana granulosa. By so doing, they correspond in their mode of termination with the nerve filaments in other glands and in the muscles. The results of nerve action on the epithelial cells of the membrana granulosa are the production of ions, as in muscular or gland polarization. These ions are probably hydrogen, carbon, and oxygen, and they have a tendency to form simple combinations, but this is rendered impossible by the resisting pressure of the fibrous tissue of the ovary. The ovum, situated in the midst of an aggregation of cells of the discus proligerus, which are practically nerve terminals, and being the only cell not connected directly or indirectly with nerve filaments, becomes enveloped in an intense potential, and as the ions continue to develop by nerve action, they are forced into the molecular construction of the ovum. In the early history of the Graafian follicle, before the complete development of the basement membrane, osmotic communication with the blood remains intact, but it is quite possible that toward the end of its history the Graafian follicle, or, rather, the membrana granulosa, presents the anomaly of a part of the body being nourished through the nervous system, in the same manner as a neuron is nourished from its cell, that is to say, by chemic displacement, or on the principle of equipotential surfaces as manifested physically in fluids and electrically on charged conductors. A blood supply is essential to laying the base of a cell, but afterwards its negative potential may be maintained or raised by nerve action or nerve connection.

Each semeniferous tube is connected with the basement membrane, which is divided into two layers: (1) A delicate, homogeneous layer, on which rest the epithelial cells; and (2) a layer of endothelial cells, which gradually pass into the interstitial tissue and bound the lymphatic spaces. From the epithelial cells the spermatozoa are developed. The nerves of the testes are distributed to the surfaces of the semeniferous tubes. They have not been traced to the epithelial lining of the tubes. The layer of the endothelial cells in the testes is the analogue of the membrana granulosa in the Graafian follicle, and the cells of both are the real terminals of cerebro-spinal nerves. The placements of the membranæ propriæ are the important factors in the differentiation of ova and spermatozoa. In the ovary the membrana propria of the follicle, which is comparatively dense, is placed between the terminal nerve cells (membrana granulosa) and the circulation; in the testis the membrana propria, which is delicate, is placed between the terminal nerve cells—the endothelial layer—and the epithelial cells, from which are derived the spermatozoa. The endothelial layer of cells border the lymph spaces. Now, after the formation of the basement membrane, if any part of the blood reaches the interior of the Graafian follicle, it must consist of the more diffusible elements; but, as we have already suggested, it is probable that it is only through the nerve filaments that such elements are conveyed to the follicle; and it is probable that osmosis is outward, and not inward. In the testicle the hydrogen, carbon, and oxygen ions, produced by nerve action through the endothelial cells, have the opportunity of acting on the lymph which bathes the surfaces of the cells. The most probable result of this action is the formation of a calcium carbonate, $CaCO_3$, or $Ca\,H_2(CO_3)_2$. This salt, together with surplus ions not reacted upon by the blood-elements, evidently reaches the epithelial cells by exosmosis through the delicate membrana propria, the pressure being in this direction. The conception is easy that these elements, and other elements of the blood, will build up the differentiated structure of the spermatozoon under proper temperature and pressure, the osmotic diffusibility of the elements being an important factor in the differentiation. Thus the calcium salt, from its positive concentrativeness and atomic weight, will form the base of the end-knob or the centrosome; the more negative elements will give character to the axis-cylinder of the tail. The position of the spermatozoon supports this explanation, the head being the part approximating the membrana propria. The important physiologic difference between ova and spermatozoa is the electro-negativity of the nucleoli of ova and the electro-positivity of the nucleoli of spermatozoa; and the difference probably rests on the electro-chemic qualities of calcium carbonate, or other electro-positive salts, representing the sperm-centrosome, and hydrogen carbonate representing the germ-nucleolus, these elements forming the nutrition of the respective cells toward the end of their constructive period.

Observations prove that the germ-nucleus advances to the center of the ovum to meet the sperm-nucleus, and that only one spermatozoon penetrates the ovum. This proves that a distinct spherical equilibrium has been established between one spermatozoon and the ovum, and that attraction has ceased. For the first time in the history of the germ-nucleolus it rounds out into a true spherical form, with equipotential hemispheres (molecular polarization). Under the stimulus of the new conditions it immediately proceeds to divide.

The phenomena of cell division, together with all the changes within the nucleus and cytoplasm (karyokinesis) can be explained in detail on the hypothesis that they proceed from the initiatory division of the nucleolus, i. e., that the potential energy that accomplishes the phenomena of division is resident in the histologic molecule of high potential, or nucleolus. The phenomenal facts of karyokinesis can be illustrated by the division of an electrically-charged body, which will be accompanied by the division of its induced magnetic field.

Fig. 1.



a. Positively electrified body with induced field; electro-positive molecule of ponderable matter with its free or vibratory space; an enzyme; a molecule of strychnia; an organic nutritive molecule such as nuclein; the sperm-centrosome.

b. Negatively electrified body with induced field; electro-negative molecule of ponderable matter with its free or vibratory space; a nucleolus with its induced magnetic field—the nucleus; the anisotropic substance with its induced field—the isotropic substance; a molecule of chloroform; the germ-nucleolus.

As represented on the inner spheres of the figures the electric potentials consist of ether units placed on insulated bodies; the potentials of molecules consist of unneutralized ether units in the molecular construction. The plus and minus signs of the outer spheres, or induced magnetic fields, show polarization of ether molecules, or polarization of ponderable molecules. The polarization can be demonstrated in the induced fields of electric potentials.

Conductivity.—By what process is an impulse propagated through organic structure? We will formulate a general law governing histologic units or molecules in nerve, muscle, glands, etc., as follows: When the potential of the unit is at rest, it is electrically static in character, and has a surrounding uniform tridimensional induced field; when the potential of the unit is functionally active, it is magnetic in character, with differentiated poles and differentiated induced fields. (Fig. 2.) The histologic unit at rest is negative in potential, and, when stimulated to polarization, supplemented by an associating positive molecule, it turns its positive pole towards the negative mass of the structure. This causes the leading-off point of a wave to become negative. Consequently the positive pole of the polarized unit is the stimulant to the adjoining unit, and thus the wave is propagated. Obviously a positive stimulus to each molecule or unit exists within the structure, except at the leading-off point. To maintain the functional potency of organic structure—(1) it must be supplied with molecules of nutrition; (2) it must have associating molecules of polarization, in order that its molecules may have equipotential hemispheres; and (3) it must have an initiatory stimulus.

Since writing the above, I have read a paper, by Dr. A. T. Mathews, in the *Century* of March, 1902. Dr. Mathews dissected out a nerve with the muscle attached. He placed the nerve in solutions of sugar, sodium, potassium, and other salts, with the results of producing differentiated degrees of functional activities of nerve and muscle. In the sugar solution the vitality of the nerve was greater and the contractions of the muscle lasted longer than in solutions of salts. He found that sodium salts stimulated and, as a rule, potassium salts did not stimulate the nerve. The sodium salts differed in the degree of stimulation, the salts of a trivalent negative being the best stimulant and the univalent the least, each salt having a distinctive stimulating value. Although the majority of the potassium salts prevented nerve action, the citrate was an exception to this rule. Acid solutions prevented functional activity of nerve and muscle. Professor Loeb's discovery that the unfertilized egg of the sea-urchin can develop in sea water to which has been added magnesium chlorid in a certain proportion, just as if a spermatozoon had entered the egg, can be explained on the basis of the associating molecules of polarization of the eggs of the sea-urchin being supplied by sea water and magnesium chlorid. Further, the fertilization of ova by spermatozoa in general,

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the limit of fertilization of ova by spermatozoa of different species, and the barrenness of certain paired sexes, are made clear by the conception that different ova have specific potentials, and require distinctive associating molecules in order to polarize.

The following tabulation is made upon the writer's interpretation of facts presented by Dr. Mathews:—

Fig. 2.

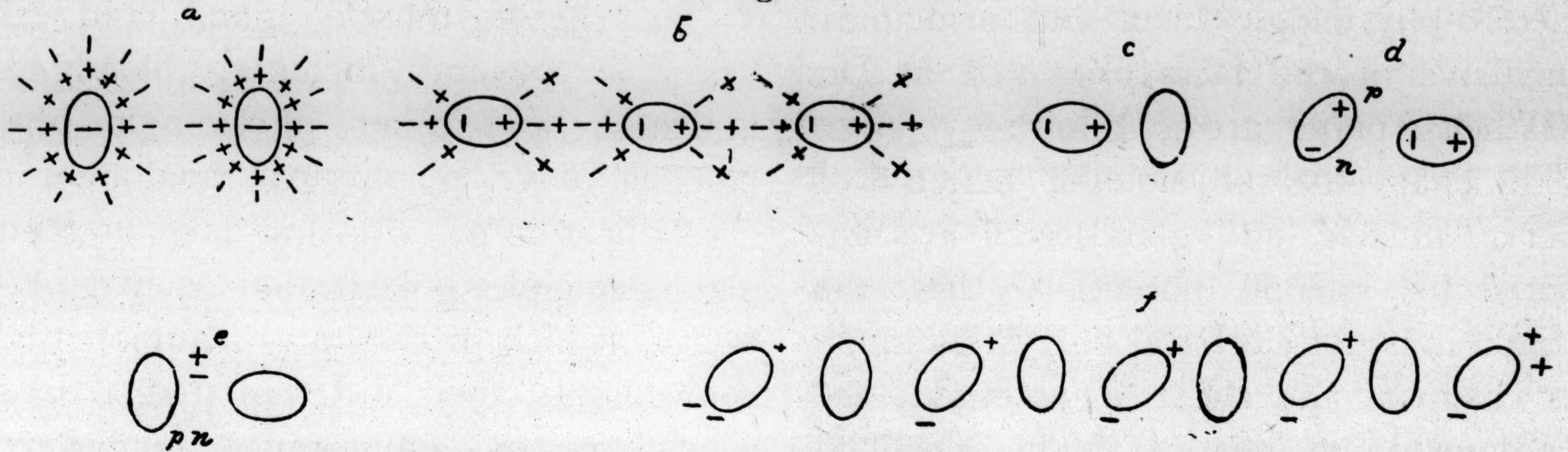

Fig. 2. Vibratory propagation: a represents physiologic units or molecules at rest surrounded by uniform induced fields, the symbol denoting that they are negative in potential; b, molecules or units in tetanized action, being polarized or magnetized with differentiated polar induced fields; c represents the initiatory molecule polarized whilst the adjoining molecule is yet at rest, the induced fields not being represented; d represents initiatory molecule depolarizing and the adjoining molecule polarized, with p and n as ions dissociating from depolarizing molecule; e represents p and n chemically united as a simple form of molecule, whilst the symbols ± represent the eliminated energy as heat; f represents the eliminated energy split up in electric potentials traveling towards their respective poles and accumulating as charges at the terminals of the neuron or other organic body. Molecules of nutrition and associating molecules of polarization are not represented.

Substance in Solution.	Molecules of nutrition.	Molecules of polarization.	Initiatory stimulation.	Stored molecules of polarization.
Sugar	supplies	do not supply	stimulates	do not interfere with.
Sodium chlorid Sodium bromid Sodium iodid Sodium fluorid	do not supply	supplies	stimulates	may diffuse.
Sod. sulphate Sod. oxalate Sod. tartrate	do not supply	supplies	stimulates more	may diffuse.
Sod. ferrocyanid Sod. citrate Sod. phosphate	do not supply	supplies	stimulates still more	may diffuse.
Dilute solutions of these salts	do not supply	do not supply	may stimulate slightly	diffuse.
Pot. citrate	do not supply	supplies	stimulates	may not diffuse.
Pot. hydrate	do not supply	may supply	stimulates	may not diffuse.
Pot. chlorid Calc. chlorid Mag. chlorid Pot. bromid Fer. chlorid	do not supply	do not supply	stimulates	may diffuse.
Acids Hydrogen chlorid	do not supply	do not supply	do not stimulate; may inhibit by reverse polarization	diffuse, perhaps neutralize.

It should be borne in mind that the essential molecules of nutrition and polarization are stored to some extent within the structure of the nerve.

The conclusions that the writer has formed from a lengthened study of electro-physiologic facts and principles, inclusive of the facts presented in Dr. Mathews' paper, are as follow:—

1. That the physiologic actions of nerve, muscle, and gland, etc., are initiated by chemic potentials—that the stimulus is not electrical only in so much as chemical and electrical potentials are fundamentally identical. The chemical stimulus does not involve an interchange of atoms between the stimulating and stimulated molecules or cells, but a polar attraction without reciprocal dissociation. Neither water nor any other substance is extracted by the stimulus, but ions are formed as a result of functional activity, which may unite and form water or carbon dioxid. 2. That the histologic cell or molecule of nerve, muscle, gland, etc., is of negative potential, and is stimulated by chemical positive potentials, as shown by the axis cylinder of the spermatozoon in alkaline fluids. 3. That electric and chemic potentials, although fundamentally identical, produce differentiated polar results on nerve and muscle, because the former is dynamic and the latter static; dynamic negativity and static positivity are stimulant to functional activity. The negative pole of a physiologic unit is attracted by a static positive potential (chemic), thus assisting normal polarization; the positive pole of a physiologic unit is attracted by a kinetic negative potential (electric), is charged thereby, and carried, to the extent of a vibratory phase, towards the opposite dynamic pole, thus assisting normal polarization. 4. That the poisonous action of salts is due to—(1) their potentials being of the same quality—positive or negative—as the cell or histologic unit; (2) their not being able to supply molecules of polarization to the cell; (3) their interference with the stored nutrition or stored molecules of polarization of the organic structure. 5. That nerve, muscle, gland, and cell action in general, including blood coagulation and other physiologic phenomena, have a physical analogue in crystallization of salts, and have, as their main principle, polarization or magnetization, which necessitates equipotential hemispheres, their differentiated actions depending on environing conditions. 6. That drugs differ fundamentally in their action. Chloroform by its negative potential neutralizes the natural positive stimulus of the blood, and may cause reverse polarization of nerve terminals similar to inhibition; it takes vibratory possession of the blood. Ether probably acts as certain potassium salts, by interfering with the molecules of polarization. Cocain blocks polarization, and as it does not damage the cell, it probably by its presence prevents molecules of polarization from being associated. Strychnin stimulates by its positive potential and high vibratory frequency. Quinin has fluorescent properties, reducing high frequencies, a fact demonstrable in the laboratory. 7. That radiation of light and heat is a molecular movement of ether seeking to establish an equilibrium between different states of matter. The molecules of ether pass through the induced fields of histologic molecules of high potential in an exposed nerve terminal, and produce polarization. 8. That the potential of a molecule or cell must be estimated on the basis of constituent ether-units, and not on that of chemical atoms. Thus water, having sixteen parts of negative oxygen and two parts of positive hydrogen, is apparently electro-negative, but approximate esti-

mation of ether-units in the atoms of oxygen and hydrogen show water to be electro-positive, and this accords with the physical character of water and its behavior under electric currents. 9. That a molecule, whether belonging to an organic or inorganic substance, in a condition of rest, or in solution, or in an unpolarized solid condition, is in the electric state, without poles, and having a uniform magnetic field; and when functionating, or in a polarized condition, is in the magnetic state, with differentiated poles and differentiated induced fields. Thus induced electrification, magnetization, crystallization, coagulation, contractility, conductivity, gland-cell action, and numerous other physical and physiologic phenomena, have a common fundamental principle.

GONOCOCCAL PERITONITIS.

By J. Henry Barbat, M. D.

Read before the California Academy of Medicine, July, 1902.

The following case is reported in order to call attention to the fact that the gonococcus is not always harmless when introduced into the peritoneal cavity, even when it has been quiescent for several years. According to many surgeons, it is perfectly safe to allow gonorrheal pus to enter the abdominal cavity during the course of a celiotomy without subsequently using irrigation or drainage. Several cases have been reported lately which seem to refute this practice, and which should be a warning to surgeons to treat all pus as dangerous in the abdominal cavity. Mrs. T., aged 25 years, applied to me for treatment on account of continued and severe pain in the pelvis on both sides, increased before and during menstruation. She gave the following history: Three years previously she had missed her courses for three months, and, not wishing children, had applied to a notorious female abortionist, who passed some instrument into her uterus, bringing on the miscarriage, which was followed by a peritonitis, which confined her to bed for three months. Previous to this event she had never had any discharge, but after the miscarriage she was troubled with a thick, yellow, irritating discharge, which she supposed was due to her abortion. The first time that her husband had intercourse with her after her recovery, he developed a discharge, which, from his description, was typical gonorrhea. Careful questioning convinced me that the woman had been infected by the abortionist with the gonococcus. Her health, which previous to this time had been perfect, began to fail, and she applied to one doctor after another, without relief of the pain in the pelvis. When I first saw her she presented the appearance of a woman who had gone through a great deal of suffering, and looked fully 40 years old. Examination showed the uterus and adnexa massed together and very tender, making differentiation of organs impossible. In view of the fact that she had been treating and taking medicine for three years without relief, I suggested to her the advisability of opening the abdomen and removing the offending structures if necessary. She gladly consented to anything which might afford her relief from pain, and remarked that she would rather die from the operation than live as she had for the past three years. The abdomen was opened in the median line and the entire pelvic contents found matted together. After careful separation, the left tube and ovary were brought out of the cavity, and the tube found occluded at its fimbriated extremity; the ovary was adherent but otherwise normal. The tube was opened and found to contain a yellowish, thick serum without the slightest appearance of pus, and so I concluded to wash it out and sew the mucosa to the peritoneum in order to keep the tube patulous. The right side was treated in the same manner, except that in lifting the tube out it burst, spilling some of its contents into the abdominal cavity, but as it was of the same character as that of the other tube, no fear was felt of the consequences. The cavity was washed out with normal salt solution and left full, and the abdomen closed. Within three hours after the operation the pulse rose to 100 and kept at that figure until next morning, 24 hours after the operation, when it began to increase in rapidity and get weaker, and her face assumed the anxious expression which betokens sepsis. I concluded to reopen the abdomen and drain. When the fingers were passed down into the pelvis, about half an ounce of thick, bloody muco-purulent material welled out, some of which was collected for examination. A tube was passed down to the bottom of the cul-de-sac, and the cavity irrigated with a $\frac{1}{1000}$ solution of formalin. The tube was left in for drainage. This proved of no avail, however, and the patient died within 48 hours after the operation.

Partial post mortem showed all the pelvic organs intensely congested, but the intestines only slightly so. The fluid in the cavity was flocculent, and no adhesions were noticed. Cover glass preparations of the fluid removed at the second operation were submitted to Dr. Ryfkogel for examination, and he reports that the specimen shows pus and red blood cells; many of the pus cells contain diplococci, which, from their appearance and staining properties, he believes to be the gonococcus. No other bacteria were to be found with the microscope. The pus was unfortunately thrown out before culture experiments could be made to confirm the microscopic examination. The tissues removed post mortem gave cultures of colon bacilli, which grew so fast that it was not possible to determine the presence of the gonococcus, but I do not believe that the colon bacillus was the cause of death, as they were not found in the pus removed during life.

590 Sutter Street.

PLAGUE—CASES 62, 63, 64, 65, 66, 67, 68.

Case 62.—Mrs. Fung Chin, age 26, died 1 A. M., Aug. 6, 1902, at 16 Ross Alley; autopsy begun 10 A.M. August 7. Body that of a well-developed, well-nourished Chinese woman, about 26 years old, and weighing about 140 pounds. There are no external signs of violence. The joints seem normal. The skin shows no eruption, except a very few small hemorrhages over the right abdomen and inguino-femoral region. There are no scars on the skin overlying the tibia. The left palm shows a chronic eczematous condition of the skin, which may have been caused by mechanical means, or by some disease such as, perhaps, syphilis. The cervical, the epitrochlear, the right axillary, and the popliteal glands are not palpable. The left axillary and the inguino-femoral glands are palpable. In the right inguino-femoral region is a visibly and palpably enlarged mass, the pressure of which has caused the overlying skin to become of a light yellow color. Section of this region shows decidedly hemorrhagic and necrosed glands, with periglandular edema. This edema extends into the iliac region of the abdominal wall, where it assumes a gelatinous appearance. Extending the incision on into the abdominal cavity, we find the right iliac and lumbar glands very much enlarged and more hemorrhagic and necrosed than the inguino-femoral glands, the surrounding edema being more hemorrhagic than externally. The axillary left inguino-femoral glands are in a state of acute hemorrhagic inflammation. The spleen measures 12½x8½x2 cm. On the surface of the capsule are several small areas of reddened elevations and some deposit of lymph, showing acute perisplenitis. The capsule is not wrinkled. There are, at the outer edge of the spleen, several wedge-shaped infarcts. The cut surface of the spleen shows enlargement of the Malpighian bodies, but the trabeculae are not very distinct. The pulp does not bulge. The surface is not diffluent. The intestines are distended with gas and are covered by the omentum, which is bound down to the superior surface of the uterus and the Fallopian tubes on both sides. The appendix is free and seems normal. There is no anterior mediastinal emphysema. The pericardium is not thickened, and it seems clear, the cavity containing about 30 cc. of blood fluid. The heart is flabby; the epicardial vessels are very much injected; and on the posterior surface of the left ventricle there are some small hemorrhages. Endocardium of the right ventricle is uniformly reddened, which is probably a post-mortem change. The pulmonary valves are not thickened, and show no granulations. The orifice laid open measures about 5 cm. The tricuspid valves show neither thickening nor granulations. The orifice laid open measures about 10 cm. The endocardium of the left ventricle is similar to that of the right. The ascending aorta shows just above the valves atheromatous plaques, varying from 5 mm. to 2 mm. in diameter, but, further, the vessel seems normal, there being no appreciable thickness nor loss of elasticity. The aortic valves show the general injection of the endocardium, and are not thickened, nor do they contain any granulations. Laid open, the aortic orifice measures about 5 cm. The mitral valves are similar to the tricuspid. Laid open, the orifice measures about 12 cm. The lungs are free in their cavities. Both crepitate throughout, and show no tubercles. The pleural cavities seem normal. The mesenteric glands not enlarged. The left kidney measures 11 cm. in length, 4 in breadth, and 2½ in thickness. Capsule strips without bringing away cortical substance. The organ is flabby. The cortical vessels are injected, and at points show small hemorrhages. The gray cortex measures about ⅔ of a centimeter, and shows, in places, alternate bands of gray and white. The pyramids are reddened. The pelvic vessels are injected. The left suprarenal capsule is not enlarged, and seems broken down by postmortem changes. Surrounding the right kidney is a marked edema, connected with the edema surrounding the enlarged hemorrhagic internal glands above referred to. The cortex and capsule of this kidney show a number of hemorrhages. This kidney and its adrenal are similar to those of the left side. Both kidneys show acute nephritis, the right hemorrhagic. The liver is small and pits on pressure. The surface shows several large, yellowish, necrotic areas, with injection of the vessels. Its consistency upon cutting resembles that of putty. It presents the boiled appearance. The pancreas seems normal. The gastric mucosa is hemorrhagic. The ileal mucosa shows no lesions. The bladder is empty and shows no evidence of disease. Neither do the ovaries nor the Fallopian tubes. There is a mild grade of endometritis. The uterus, however, is not noticeably enlarged. There is no evidence of venereal disease of the external genitals. Microscopy.—Smears from the enlarged hemorrhagic inguino-femoral glands show a few pest-like bacilli. Smears from the hemorrhagic internal glands show a larger number of pest-like bacilli. Smears from the spleen show numerous pest-like bacilli. The probable cause of death: bubonic plague.

Case 63.—Gee Ha Yen, 25 years old, died at 116 Waverly Place, at 6 A. M., August 17. Body is that of a muscular, well-developed Chinaman. Over the sternum is evidence of "black san" treatment. In the right axilla is a visibly and palpably-enlarged bubo, with extensive surrounding edema, which extends beyond the midsternal line. The skin shows no antemortem lesions. The joints are normal; there are no signs of venereal disease. A section of the axillary bubo and the surrounding tissues shows typical plague lesions. The glands of the left axilla and the inguino-femoral glands are somewhat enlarged, and show cortical hemorrhages. The muscles of the right anterior thorax are pale and watery; those of the left anterior thorax, red and moderately moist. The heart is enlarged; the right auricle dilated and full of very dark blood. The left ventricle is firmly contracted. There are subepicardial hemorrhages. The cardiac valves and orifices seem normal. The heart muscle shows acute myocarditis. The lungs are uniformly congested, and seem normal, save at the apex of the left lung, where there are a few caseous tubercles, but no cavity formation. The spleen is enlarged. There is an acute perisplenitis. The Malpighian corpuscles are distinct. The pulp does not bulge, is not diffluent, but well supplied with blood. The organ is soft. The kidneys show chronic nephritis, most marked in the right, with acute processes grafted on. The bladder is empty, and, along with the ureters, seems unaffected. The urethra seems normal, as do the testicles, the pancreas, and the suprarenal capsules. The liver is enlarged, and shows a typical picture of acute hepatitis, and there are several areas of necrosis, but no circumscribed abscesses. The stomach shows acute hemorrhagic gastritis. The mucosa of the intestines is injected, and at the lower end of the ilium there are several old scars, made plain by surrounding hemorrhages. The mesenteric glands are not enlarged. Peyer's patches are in places injected and slightly hemorrhagic. Microscopy.—The enlarged hemorrhagic-necrotic right axillary glands and the spleen show numerous pest-like bacilli. Probable cause of death, bubonic plague.

Case 64.—Yam Ching, age 45, died at 742 Washington Street, at 2 P. M., August 19. He worked at 731 Washington Street. Autopsy begun at 4:30. This case was not seen clinically. Body is that of a very well-developed, muscular Chinaman, showing a large mass in the right neck. The skin overlying this enlargement shows an ulcer about 2 cm. in diameter, which is covered over by a grayish coating and protected by surgical absorbent cotton altogether unlike the kind used by Chinese physicians. Section of this mass shows typical plague lesions. The periglandular hemorrhagic edema extends past the median line and on to the upper part of the chest and posteriorly to the middle of the neck. The glands in this mass show hemorrhagic areas and spots of necrosis. There is a subcutaneous polyadenitis over the body, the individual glands showing deep cortical injection, the consistency of the glands being soft. The pericardium shows a few small hemorrhages. The heart presents a typical picture of acute myocarditis, but the cardiac valves and large vessels of the thorax do not present any morbid lesions, save the superior vena cava, which shows intimal hemorrhages. The lungs show at both apices pleural scars, the pleura being somewhat thickened. Nowhere are tubercles found. The posterior borders of the lungs are injected. The spleen shows the characteristics of acute hyperplastic splenitis. The pancreas, the suprarenal capsules, and the ureters appear normal. Both kidneys show chronic nephritis. The bladder is firmly contracted and empty. The urethra shows nothing abnormal; neither do the testicles. The liver presents on its superior surface several yellowish areas of necrosis, but no circumscribed abscesses. Section of the liver shows an acute hepatitis and distention of the bile ducts, which is evidently caused by the distomum sinense. The intestines show a general mucosal catarrh, but the stomach shows a well-marked hemorrhagic gastritis. The tonsils are about normal in size and are injected, but show no peritonsular edema nor evidence of inflammation; neither do the trachea and larynx. Microscopy.—Smears from the enlarged cervical glands and from the spleen show typical pest-like organisms. Probable cause of death: bubonic plague.

Case 65.—Leong Toy, age 45, died at 1 P. M., August 19, at 722 Jackson Street. Had been working at No. 4 Bartlett Alley, and had been sick for two or three days. This case was not seen clinically. The body is fairly well-nourished and well-developed, showing no external marks of violence. The face is generally injected, but there appears nowhere on the body any eruption nor visible enlargements. In the right inguinal region, a soft bubo is palpable, and appears to be about 2 cm. in diameter. The glands of the left inguino-femoral region, while palpable, are small, and there are nowhere else any palpable subcutaneous glands. From external inspection of the body, there are no signs observable which particularly indicate whether or not this man had plague. Section of the right inguino-femoral region, however, shows that the palpable gland above mentioned is not only hemorrhagic and necrotic, but is surrounded by hemorrhagic edema. Extending the incision into the abdominal cavity, decidedly hemorrhagic iliac glands are met with, and the surrounding edema is very markd. The heart, besides showing acute myocarditis, presents nothing else of a special interest, nor do the large vessels of the thorax. The left lung is very extensively bound to the chest wall by pleuritic adhesions, and the lung is removed with much difficulty, but at no point are there any tubercles. The right lung is bound down posteriorly by old adhesions, but shows no tubercles nor areas of consolidation. The spleen shows no perisplenitis, but upon section gives a typical picture of the "sago" spleen. The pancreas, the ureters, and the bladder and urethra are normal. The kidneys show chronic nephritis. The liver is of the "nutmeg" type, but the biliary ducts are much distended and somewhat thickened, due to the distomum sinense, this being the fifth case to date in which this trematode has been found. The gall-bladder is distended, but the gall duct is patent throughout. The intestinal mucosa presents nothing abnormal, but the intestinal contents show numbers of the above-mentioned fluke. The tonsils seem normal, as do the esophagus, the larynx, and the trachea. The axillary glands, as do the left inguino-femoral glands, show the cortical injection. Microscopy:—Smears from the enlarged right inguino-femoral and iliac glands and from the spleen show numerous organisms which are morphologically and tinctorially pest-like. Probable cause of death: bubonic plague.

Case 66.—Soo Wing, age 35, Chinaman, died at 6 P. M., August 20, at 636 Pacific Street. The body is that of a very well-developed, muscular Chinaman, showing the principal pest-like evidence in the right inguinal region, consisting of a bubo characterized by typical plague lesions of hemorrhagic periglandular edema, hemorrhages into the glands, necrotic areas in the glands, and the soft consistency of the glands. There are not in the enlarged lymphatic glands any of the attributes of syphilitic or tubercular infection, nor are they joined together by dilated, thickened, or inflamed lymph vessels. The hemorrhagic edema and the enlargement of the glands extends to those of the iliac and lumbar regions. The point of infection is an area of the skin about 2 cm. in diameter and situated about 4 cm. from the anterior superior spine of the ilium, about 2½ cm. from its crest. The hemorrhage extends up to this area, which is infiltrated and covered over by dark red skin, which evidently has been the wall of a blood vesicle. Connected with point of infection are no evidences of lymphangitis. This case shows acute myocarditis, splenitis, nephritis, and hepatitis, and extensive pleurisy on the left side and at the right apex. Also bilateral hemorrhagic epididymitis, hemorrhages into the adventitia of the veins of the hemorrhagic area above mentioned, and into the sheath of the right anterior crural nerve and large branches. The femoral glands are somewhat enlarged and show cortical injection, and the glands of the axillae and the left inguino-femoral region show a polyadenitis, characterized by a soft consistency of the glands and cortical injection, and, in some instances, hemorrhages. The bladder is empty, and firmly contracted. There is no evidence of venereal disease in the urethra, or on the penis, or in the testicles. Microscopy.—Smears from the enlarged glands and from the spleen show typical pest-like organisms. Probable cause of death: bubonic plague.

Case 67.—Quong Kum, age 29, Chinaman, died at 918½ Dupont Street, at 6 A.M., August 22. The body is that of a very well-developed Chinaman, showing in the right popliteal space a rather firm enlargement, section of which shows an extensive hemorrhage, but small glands. Similar adenitis is found in the other parts of the body, the mesenteric glands included. The kidneys, the liver, and the heart present typical pictures of acute parenchymatous degeneration. The liver, also, shows extensive infarcts, the spleen presenting acute hyperplastic splenitis. The bladder contains about 5 cc. of urine. There is no evidence of venereal disease. The epididymis on the left side shows numerous hemorrhages. Intestines show a mild grade of catarrh. Peyer's patches seem normal. The lungs show well-marked areas of broncho-pneumonia, situated in an extensive pulmonary edema. Sections of these consolidated areas rapidly sink when dropped in water. The pleura overlying these areas is hemorrhagic, and in some places show a distinct roughening of its surface, as though it had been gently sandpapered. Microscopy. — Smears from the pneumonic areas show numerous pest-like organisms, while smears from the spleen show not more than from 6 to 8 such organisms in one field. The probable cause of death: pneumonic plague.

Case 68.—Lee Ying Ming, age 57, died at 2 P. M., August 23, at 909 Dupont Street. Case not seen clinically. Autopsy was begun at 11 A. M., August 24. The body is of a fairly well-developed man, showing the principal evidence of plague in the left inguino-femoral region. This evidence consists of an indurated swelling, section of which reveals acute adenitis, characterized by hemorrhages and necrotic areas of the glands, with hemorrhagico-gelatinous periglandular edema. Continuing the section into the abdominal cavity, the iliac and lumbar glands are hemorrhagico-necrotic and the surrounding edema is decidedly hemorrhagic. The sero-gelatinous edema extends as far as the left suprarenal capsule. There is a splenic tumor showing evidence of both an old and an acute perisplenitis. The liver shows cloudy swelling and hemorrhages into the base of the suspensory ligament. There is an acute nephritis. The heart shows an acute myocarditis, with no special affection of the valves, and several subpericardial hemorrhages. The pericardium shows four or five hemorrhages. The left lung is firmly adherent to the chest wall by an old pleurisy, and shows at the anterior part of the upper lobe a caseous tubercle, but elsewhere there is no consolidation nor cavity formation. The right lung shows apical pleurisy, but no consolidation at any point. The pancreas, the suprarenal capsules, the ureters and bladder are essentially unaffected. The anterior urethra shows no evidence of venereal disease. On the right side of the prepuce is the smooth scar, but nowhere is there any ulceration. The testicles and the epididymis appear normal. Sections of the other subcutaneous lymph-gland regions show a hemorrhagic polyadenitis. None of the hemorrhagic glands are connected by dilated or tortuous lymph channels, and there is no evidence of lymphangitis or phlebitis. This case clearly demonstrates that the existence of a chronic disease, as, for instance, pleurisy, above referred to, and of, perhaps, syphilis, as may be indicated by the prepucial scar, does not render a person immune to infection by pest-like bacilli, which cause hemorrhagico-necrotic buboes, with extensive hemorrhagico-gelatinous periglandular edema. Such typical microscopic evidence clearly shows that the death of this man was not caused by Hodgkins' disease, or leucocythemia, or venereal disease, or lymphangite infectieuse, or by diplo- or streptococcal lymphadenitis, or grandular fever. Microscopy.—Smears from the left inguino-femoral glands show numerous doughnut forms, along with a few bipolar bacilli. Smears from the left iliac glands show a larger number of bipolar bacilli and a fewer number of the doughnut forms. Smears from the spleen show still fewer doughnut forms and a larger number of typical pest-like bacilli. The probable cause of death: bubonic plague.

Occidental Medical Times

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THE NOMINATION OF DR. PARDEE.

The nomination of George C. Pardee as a candidate for Governor of the state of California is a matter worthy of consideration by the medical profession, especially at this time. Dr. Pardee brings to the position a record in private, professional, and public life that is beyond reproach. He is a superior man in every respect; as a physician and specialist he stands among the very first of our state, and as a politician he ranks far above the majority and among the purest and the best of his own or any other party. It is admitted by all that the man is most fit for the office, and it he is defeated it will be at the hands of the disgraceful machine element of this state. To the medical men of this commonwealth his election would mean a partial restoration of their position in the world of science and medicine. The notoriously false administration of affairs under the present regime would be done away with; men of extreme incompetence would not be named for places of trust and honor, nor would they be allowed, much less forced, to disgrace the name of their state or medicine at the servile dictation of one who respects neither truth nor honor. The history of the past would be rewritten, and truth would at last prevail. This may appear to some a trivial question in so important an occurrence as the election of a governor; but when it is recalled what effort has been put forth by political and financial interests to keep up a lie, published and spread the world over by the Chief Executive of this state, it is not impossible that the interests involved will consider it necessary to have more pliable material at the helm. Many a man has gone down to defeat on a similar basis. George C. Pardee can only consider the medico-political questions of this state in one light; and this whole state has been unanimous in condemning the truth of that question most vigorously and falsely. It behooves the medical profession, therefore, no matter what his political affiliation may be, to see that no one shall be put in office who may fail in his duty to those who not only play a large but an influential part in this state's affairs. Let every man therefore rise to the occasion and make a fight for truth, a cleaner government, and, above all, see that a man shall not be defeated because of his purity, honesty, and fitness for office.

THE BOARD OF SUPERVISORS, THE MAYOR, AND THE PLAGUE.

On many occasions it has been a matter of regret that the question of the existence of plague should ever again be given space in these columns; but to the people of this and the United States it is still a menace of the greatest importance. By the world at large its existence has long ago ceased to be a question; by the politicians, press, and people of this state it is still emphatically denied, and because of this denial no sufficient effort is or can be put forth to suppress the contagion. Therefore until the political and financial interests of our state shall accept the fact and institute the proper measures against its spread, the question is the gravest that confronts us, and demands to be kept before the public. It is unfortunate oftentimes for the purposes of man that "the truth is mighty and will prevail," even though death must be made the means of the attainment of this end. Ten more cases are added to the list for the month of August, and so virulent is the poison growing that it has appeared necessary to the representative of our national government to ask for aid in some effort to stem the tide. He has not only appealed to his superiors, but his communication to the Board of Health is here presented:—

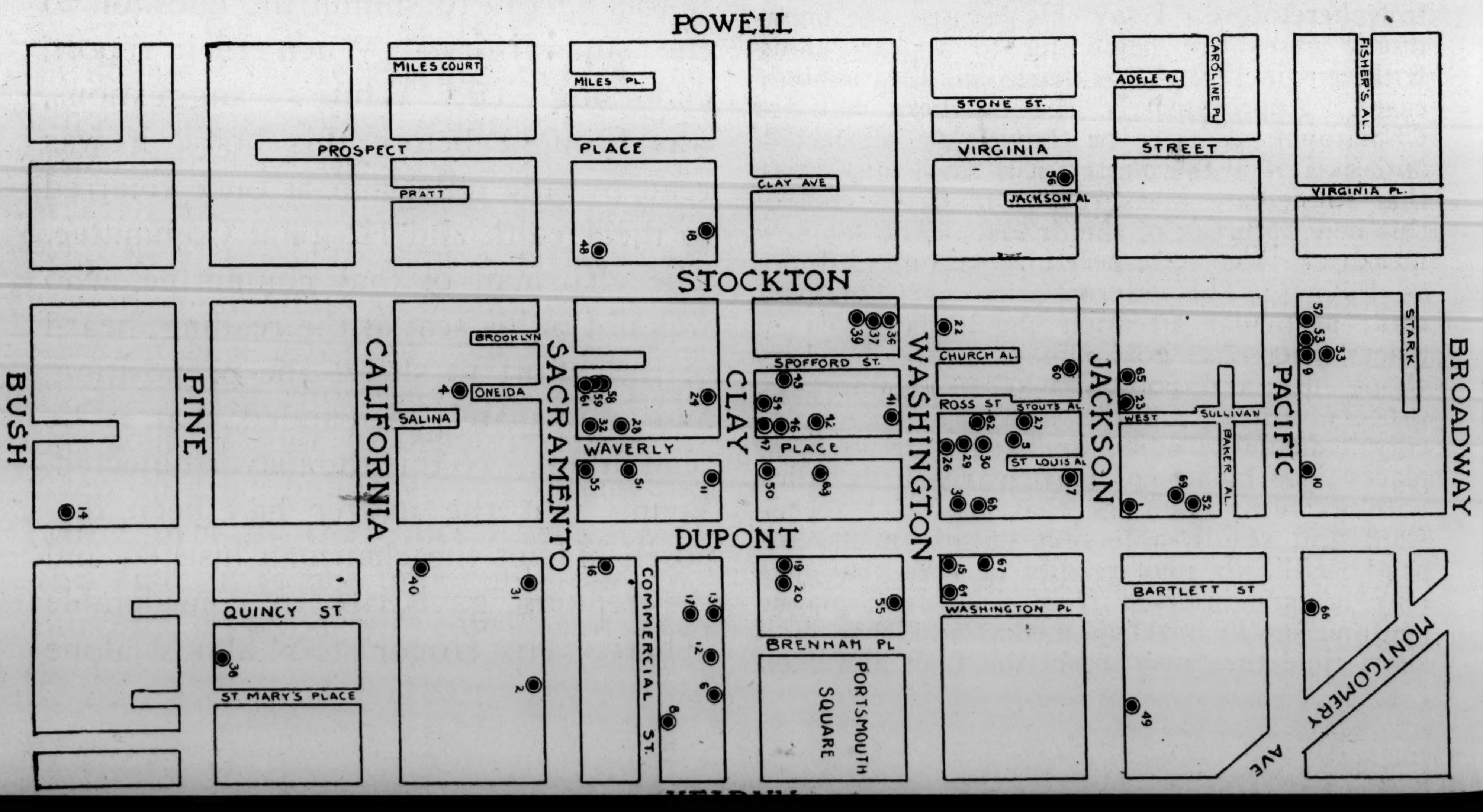
PUBLIC HEALTH AND MARINE HOSPITAL SERVICE,
Office of Medical Officer in Command,
U. S. Plague Laboratory,
641 Merchant Street, San Francisco, Cal.,
August 24, 1902.

DR. J. M. WILLIAMSON, President of the City Board of Health, San Francisco, Cal. —*Dear Sir:* During this month the deaths from plague have been rather frequent, especially in the week just ended. The following deaths have occurred during the past week: Sunday, one; Tuesday, two; Wednesday, one; Friday, one. Case No. 67, of the 22d, was typical plague broncho-pneumonia. On the 30th of July a case of pneumonic plague died at the Oriental Dispensary. The autopsies in the other cases of the last week show extensive hemorrhages, and none of them were sick for more than two or three days, showing that the disease is becoming very virulent. During my connection with the plague work here, beginning April, 1901, I have watched the course of the disease carefully, making daily observations, and I am now more apprehensive that the disease is likely to spread rapidly than I have been any time heretofore. I say this because the pneumonic cases are beginning to appear, along with an increased virulence in the bubonic cases. Approximately the northern half of Chinatown seems to be thoroughly reinfected, and, as I view the matter, it is most imperative that immediate measures be taken to control this new outbreak of the disease. The sanitary measures that I respectfully recommend are as follows: The extermination of Chinatown rats; particular attention should be given to places where rats go for food, such as butcher-shops, fish and poultry markets, restaurants, grocery stores, and the like. Flies undoubtedly transmit plague, and there are several places in Chinatown, particularly Fish Alley with its filthy counters, that may act as constant and readily-accessible culture media for pest bacilli. It may readily be seen that flies may become infected from dead rats, plague sputum, or Fish Alley media, and that in a short time they may infect the fruit and food that has been cooked. In this way the disease may continue to spread. I therefore believe it would be a wise step to screen the meat, fruit, and fish markets, to prevent their infection by flies; also to screen Chinatown stables, which are breeding-places for flies. In order to prevent dried pest sputum from being carried by dust, I would recommend that the streets in Chinatown be thoroughly sprayed with crude petroleum. As to the disinfection of buildings: Wherever a plague case is known to have occurred it is of the utmost importance that the floors be torn up, and that a complete and careful search be made for rats which might have died of plague, in order that such sources of contagion may be destroyed. The floors should be thoroughly soaked with $\frac{1}{2000}$ bichlorid of mercury, and the house fumigated with sulphur dioxid. Since several of the recent cases have been among gamblers, I believe it advisable to make a general disinfection of the "club-houses" in Chinatown, where about 90 per cent of the population congregate sometime throughout the day, and also of the theaters, restaurants, and joss houses. It is also advisable to be ready, at short notice, to isolate persons who have been exposed to pneumonic plague, this being the most actively contagious form of the disease. While I refer especially to Chinatown, it is considered very important that the extermination of rats throughout the city should be accomplished as soon as possible, especially along the water-front and in the markets. I would respectfully suggest that a sum of not less than $1,000 be held available for the work and for the probable emergencies. It is my opinion that the situation is very serious, and that immediate action is necessary.

Very respectfully,
M. J. White,
Asst. Surgeon, P. H. and M. H. S. in Command.

On receipt of this communication a meeting of the board was called, when it was agreed to submit the question to the supervisors. When their report, endorsing Dr. White's suggestions, was brought before this body, it was read by title only, and at once referred to the Health and Hospital Committee. The chairman of that committee, who was not in his seat at the reading, heard of this effort to shelve the proposition, and immediately demanded that it be read in full. To this the mayor objected, saying that the matter had been disposed of; but the chairman insisted, and the reading gave rise to considerable debate. His Honor stood almost alone in opposition, declaring that he did not and would not recognize the Board of Health; that he would have nothing to do with them, and if the proposal was favorably acted upon he would veto it. Whereupon several of the supervisors gave expression to their opinions, declaring that the truth of the question was no longer debatable; that the fact had been demonstrated to their satisfaction, to that of the scientific and lay world, and that it was foolish and absurd for the mayor to close his eyes to such dangerous conditions. Whereupon his Honor in anger demanded that a committee of five citizens be appointed to consider the truth of the affair, and, on being refused, urged that five physicians be appointed to act in the same capacity. The reply came back that such a procedure was irrelevant, whether his Honor recognized the facts in question, the Board of Health, *de jure* or *de facto*, or not; that the representative of the United States Government had urged the necessity of these measures, and, unless something was done promptly, certainly the Government would be perfectly free to use whatever measures it deemed advisable, and that it was not a question to be dallied with any longer. On motion, the resolution to appropriate the money to be used for disinfecting the houses and exterminating rats, flies, etc., under the supervision of a committee consisting of Dr. D'Ancona, Mr. Brandenstein, and his Honor, was ordered, by an almost unaminous vote to print. It is just possible that his Honor will veto the order, but wise counsel has been offered him, and he may heed the writing on the wall. Thus by degrees the truth is establishing itself, and the falsifiers of this state are being entangled into a position where no power can screen them from the lie that they have so earnestly sought to uphold. When Attorney-General Ford requested that the *quo warranto* proceedings against the Board of Health be dismissed, he admitted the injustice and falseness of the charges, and in the name of the state of California indirectly confirmed the truth; when the Republican party refused to honor Mr. Gage with the nomination of governor for a second term, it admitted the rottenness of his administration and put its seal upon his dishonest and false methods; and when the Board of Supervisors of San Francisco rebuked the mayor by word and action, another stunning blow was dealt this most disgraceful chapter of our political history.

As convincing an argument as can



THE HAHNEMANN HOSPITAL CO

be presented in reply to many disputed points is the map which is shown below. To the eye it certainly presents a picture of an epidemic, not only as to the number of cases, but their occurrence in the same block and in the same houses. It is a picturesque and eloquent denial of the assertions of our political friends and some dishonest doctors.

CORRESPONDENCE.

Will you kindly give me space to reply to an editorial article in the "Pacific Medical Journal," which I quote in its entirety, that your readers may fully comprehend the situation.

ANOTHER VICTORY.

"The College of Physicians and Surgeons, of San Francisco, has scored another victory, this time at the Niagara Falls meeting of the Association of American Dental Faculties. Certain irresponsible parties sent a mass of slanderous and libelous type-written literature to the association about the Dental Department of the College of Physicians and Surgeons, claiming that gross irregularities and fraud were practiced by the latter institution in admitting students and graduating them. Every charge was proven to be absolutely without any foundation in truth. The charges further showed animus and falsehoods, and were written by some of the discharged employees. The authors should be called before a court of justice, to prove their slanderous and criminally-libelous statements, or take a little dose of medicine in the form of $50,000 damages and a few years in the state prison. We are sure this would have a wholesome effect upon slanderers and libelers in general and upon these villifiers in particular."

As an exhibition of the falsity of this and other similar statements appearing in that publication from time to time, I will premise by saying that I was a member of the original dental faculty of that college until the close of the session of 1901, that I am not a discharged employee of that or any other institution, nor was my resignation from it forced or requested, as the following official communication will show:—

"College of Physicians and Surgeons
of San Francisco,
Secretary of the Board of Trustees,
Eldridge Cal., July 9, 1901.

"Prof. J. L. Asay, 358 South Sixth Street, San Jose, Cal.—*Dear Doctor:* I am directed to acknowledge receipt of your favor of the 29th of June, 1901, tendering your resignation from the College of P. & S. of S. F.

"Your resignation having been accepted by the board, the trustees desire me express their thanks for the service rendered by you to the school during your incumbency, and their hope that success may be yours in any other field of labor you may take up.

"I am, dear doctor, very truly yours,
"A. E. Osborne, M. D.,
"Secretary."

That I, alone, over my own signature, preferred the charges to which reference is thus made, the editors of that journal and every member of the Board of Trustees of the College of Physicians and Surgeons well knew, since a certified copy was received by them from the secretary of the executive committee of the National Association of Dental Faculties over three months before they were summoned to trial at Niagara Falls. I resigned from that college, as the board of trustees, its faculties, and alumni know, on account of the dishonorable practices of its governing body. Briefly stated, the charges, without giving names, consist of: "(1) Violation of the rules of the National Association of Dental Faculties," under which head it is specified that students had been admitted who were not in attendance from ten days to one month after the time prescribed by the National Association of Dental Faculties and the published requirements of the college; that the college does not and never has required of its students an attendance of over 75 per cent in lectures and college work; that students who had failed in examination in almost every study in other colleges were given advanced standing in the College of Physicians and Surgeons without previous examination by the professors of the several chairs in which they failed; that parties had been given advanced standing in this college, and had been passed and graduated, who had never previously been matriculated in or attended a course in any medical or dental college; that lectures for the session (dental) for 1900-1 did not begin until the third day of December, 1900; consequently a full course of seven calendar months could not be given; that the preliminary education required of students for admission has not been adhered to.

"Charge 2.—Conduct prejudicial to the National Association of Dental Faculties in the violation of the constitution and by-laws of the College of Physicians and Surgeons by the board of trustees of said college." The truth is that there had never been a meeting of the dental faculty since the organization of the college, nor has any officer of the dental faculty ever been elected by said faculty, as provided in said constitution and by-laws; that professors have been removed by the board of trustees without just cause, without being charged, and without a hearing, and for the reason only that they had protested against the illegal acts of the board of trustees.

"Charge 3.—Conduct unbecoming a member of the National Association of Dental Faculties," in this, that professors in the dental department were not supported by the president and dean in their efforts to preserve order and discipline in their classes; that the final examinations are arranged and conducted in such manner as to be farcical, and are not a test of the students' knowledge or

BROADWAY

previous study; that the chair of dental pathology and therapeutics is not competently filled to teach said branch of dentistry, the occupant never having studied or practiced dentistry, or been identified with the dental profession in any manner; that the professor of physiology was reprimanded by the dean of the college for conditioning students in examination, and afterwards requested to not remove any conditions, that such students might be prevented from leaving and entering other colleges; that a student had been admitted who was physically and mentally incompetent to pursue the study and practice of dentistry, such admission being to serve the commercial ends of the college.

"Charge 4.—Fraud."—In this, that a student had been graduated in 1901 over the negative votes of two professors; that said student did not appear for final examination in anatomy; that he failed to perform any of his required work in orthodontia during his whole term of three years; that he had failed in his examinations in physiology and dental pathology and therapeutics.

Here we find four distinct charges, with their specifications. The executive committee did not examine into any charge but the first; thus another falsehood disposed of, "that every charge was proven to be absolutely without foundation in truth."

In substantiation of this fact I quote from a report of the committee, as follows: "That part of the charges, which related to matters with which the Faculties Associations had no concern, those which referred to violation of their own rules, were not considered by the executive committee. Those which constituted an alleged violation of the rules of the National Association of Dental Faculties were in every case met with affidavits disproving them. How these affidavits were obtained, or whether they were true or false, the committee had no way of finding out. . . . There was no one to prosecute the case but the committee, and no other finding but that the charges were not sustained was possible as the case stood." A demand was twice made that the association send a committee to California to investigate, examine witnesses, and take testimony, but was refused on account of its "expense and there being no provision for that purpose." This condition of affairs demonstrates that the National Association of Dental Faculties is insincere in its protestations for a high standard of dental education, else it is incompetent or powerless to inquire into the conduct of colleges composing its membership and to enforce its own regulations. Not one of the charges were disproved, nor can be disproved, for they are facts known to every professor and student in the college at the time, to every member of the board of trustees, and have been a scandal in the dental profession of California for two years or more, and where it is recognized that that college has its own peculiar code of procedure to extricate itself from unpleasant situations. It may be, as suggested, that the Faculties Association dreaded to molest this condition of affairs for fear the results might accompany its representatives across the ocean to the International Dental Federation at Stockholm, where they are bidding for the recognition of American dental diplomas in Europe. It is impossible to conceive how affidavits could disprove the evidence of the registrar of the University of New Zealand and the dean of Cooper Medical College, who both officially certified to the fact, and which testimony was in possession of the executive committee, that the parties alluded to in the fourth specification of charge 1, who were given advanced standing on account of alleged previous attendance in these institutions, had neither of them ever matriculated or attended a course in these respective medical colleges. Nor can it be understood how the evidence of the dean of the Dental Department of the University of California, who officially certified that students who had been given advanced standing in the P. and S. had failed upon examination in nearly every study, together with the further testimony of professors that none of these students had been examined either before or after admission for such advanced standing, could be so carelessly laid aside.

Are not these things strange, very strange? I regret that, not being now connected with any college, I was not entitled to a seat or voice in the Association, hence could not prosecute the case myself. The distance of 3,000 miles intervening between the place of meeting and the residences of witnesses, rendered it impossible to produce evidence in person; hence all testimony had to be forwarded in the form of affidavits, six in number, with documentary evidence, which proved every specification, and in many was cumulative evidence; while the representatives of the college were there in person, their expenses paid by a corporation grown rich from the labors and sacrifices of its former faculty, which it boastingly claims to be "discharged employees."

J. L. Asay, M. D.,
Formerly Professor of Dental Pathology and Therapeutics.
358 South Sixth, San Jose Avenue.

IN MEMORIAM.

RESOLUTIONS ON THE DEATH OF DR. J. H. MORTON.

Whereas, The Sacramento Society for Medical Improvement has suffered a grievous loss through the death of its fellow-member, Dr. J. H. Morton, who lost his life through devotion to his duty as a physician;

Resolved, That the society deplores the untimely end of one in the flower of his manhood, who gave promise of a splendid career, already well begun, and that the society testifies in its memorial to its admiration of the character of Dr. Morton;

Resolved, That these resolutions be spread upon the minutes of the society, and that a copy of the same be forwarded to his relatives.

Committee: G. A. White, M. D.; F. B. Sutliff, M. D.; E. W. Twitchell, M. D.

SOCIETY PROCEEDINGS

SACRAMENTO SOCIETY FOR MEDICAL IMPROVEMENT.

Regular Meeting, March, 1902.

The president, J. A. McKee, M. D., in the chair.

HEMORRHAGE IN THE NEW-BORN.

Dr. G. C. Simmons reported a case of hemorrhage in the new-born. It is the first case I have met with in my practice. The case turned out successfully. Delivery was normal. On the second day after the birth the nurse called my attention to the amount of black material the child passed. To this I paid little attention. On the third day it was quite tinged with blood, and from the third to the fifth day there were 27 napkins saturated with blood. Drs. Briggs and White saw the case in consultation. The child made a good recovery. The remedies were: Gelatin in large quantities to the mother, and to the child tanningen by the mouth, one grain to two-grain doses every three hours, and a solution 1 per cent suprarenal capsule by irrigation after each passage. The second case I have to report is that of a lady, who had suffered from a supposed attack of appendicitis some months ago. Sometime afterwards she noticed a peculiar substance in the feces, and since that time has been paying attention to it. The amount of matter has increased in amount, there being about a teaspoonful at least. It looks like sand, and consists of calcium phosphate, etc. The supposition was that an abscess formed in the locality of the ureter and that urine passed into the intestine—that urine was passed from one kidney into the intestines. To verify this, we gave the patient a suppository of methylin blue. The amount absorbed by the rectum will color the urine and the sediment, and, if colored, would suggest that the kidney is the cause; if not, it comes from higher up in the intestinal tract.

GLIOMA OF THE BRAIN.

Dr. James said he was called to see a patient, a man about 50 years of age, who was delirious and showed symptoms of typhoid. On examination found that the abdomen was tympanitic. He had partaken of some candy, a portion of which had made another man sick, causing him to vomit. This man did not vomit, but became unconscious. I thought that the patient's condition might be due to the ingestion of the candy, so I administered jalap and calomel, but with no effect, and I finally resorted to croton oil. He passed a quantity of undigested material, but his symptoms did not clear up. He had now only partial use of the right limb and hand, with anesthesia of the palm and sole. I called in Dr. Cox, and we concluded that the trouble was in the cerebrum. He remained in this unconscious condition for 60 hours, and then died. During this time respiration gradually increased in depth, finally became sonorous; the pulse rate increased and became thready. After death we removed the skull cap, and found a tumor about the size of a hen's egg in the left frontal lobe, resting on the corpus callosum. The tumor was about the same color as the cortex, but softer. Fatty degeneration had taken place in a portion of it, in which area hemorrhage had taken place, a large clot being present. I mounted some of the substance from the tumor, and found it to have the typical structure of a glioma, glistening fibers, with the oval nuclei of cells, the protoplasm of which is unseen until stained. His history was as follows: About eight months before he was suffering from melancholia, that is, he was morose and sad, shunned company, and seemed to be continually "blue;" he was also failing in weight very fast, went from 130 to 90 pounds. Cod-liver oil and tonics were administered, and he was restored to a fairly-good condition again; but just before his last attack his melancholy began to reappear; he was also observed to be holding his head at times, as if in pain.

MENTHOLIZATION OF THE AIR PASSAGES IN ETHER ANESTHESIA.

Dr. W. A. Briggs read a paper on this subject. [Published at page 139.] In the absence of Dr. Dufficy, who had kept a record of some 12 cases that had been anesthetized in this manner, Dr. Cox gave a detailed account of each case, as follows:—

Mrs. F., age 39, operation and curettage. Ether was pushed from the start; no resistance, no coughing; patient under in 12 minutes. Dr. Dufficy, in speaking of this case, stated that, as it was the first, he took it leisurely, consuming this much time.

Case 2. Mrs. M., age 26, abscess of the breast. Ether was forced from the start; no resistance, no coughing; under in 6 minutes; no after vomiting.

Case 3. Mrs. F., age 40, removal of hemorrhoids. Ether was pushed from the start; no coughing, no resistance; under in 5 minutes; no after vomiting.

Case 4. Surgical fixation of the kidney. Ether was pushed from the start; no resistance; under in 5 minutes.

Case 5. Mrs. C., amputation of the breast. Ether was pushed from the start; under in 6 minutes.

Case 6. Mrs. H., age 32, operation for the radical cure of hernia. Ether was forced from the start; there was some resistance during the first stage; no coughing; under in 9 minutes; vomited. The subject was a poor one for ether; kept up a heavy snoring during the operation.

Case 7. Mrs. W., age 67; removal of epithelioma of the rectum. Ether was pushed from the start; no coughing, no vomiting; patient under in 5 minutes.

Case 8. No resistance, no coughing; patient under in 6 minutes.

Case 9. Had some trouble in getting patient to allow cone to be placed over face; when this was accomplished, patient went under in a jiffy.

Case 10. There was no resistance, no coughing; patient under in 5 minutes.

Case 11. Ether forced from the start; no coughing, no vomiting; patient under in 12 minutes. This patient would forget to breathe, and had to keep urging her to do so.

Case 12. Appendicular abscess. There was slight resistance during the first stage; under in 7 minutes.

I find that this method does away with that disagreeable feeling which patients generally have when the ether is first inhaled. I frequently find that you can push the ether from the start without distressing the patient. In those cases that did vomit, the nausea did not last so long as usual, and the vomiting was slight. I wish to say in regard to this method of starting an anesthetic that I consider it an admirable one; in fact, I can not say too much in its behalf. Some four or five years ago I took ether myself, and the feeling that comes over one is indescribable; it is like suffocation; and, while you know that the person administering the anesthetic is doing all he can for you, you can not overcome the feeling that comes over you. Drowning would seem preferable. In hospital practice I have noticed that a person who has once taken it, and has to come back a second time, will invariably say that he does not mind the operation nearly as much as the anesthetic. In order to test this method, I suggested that it be tried upon myself. Dr. James also submitted. In my case it was a peaceful dream. It lasted only a few minutes, and the feeling was most pleasant. There was no irritation at all. Upon taking a full breath, that stifling feeling was absent. I submitted to the ordeal immediately after lunch hour, and I had partaken of a hearty meal, and did not vomit at all, and in ten or fifteen minutes after I got off the table I felt comparatively well. I think ether can be used in this way where sometimes we are tempted to use chloroform.

Dr. James: I wish to state that when I took it, it was after eating a hearty meal. It was pleasant from the start; there was no suffocation, simply went to sleep, and in ten minutes afterwards I was normal; no nausea.

Dr. W. A. Briggs: Speaking from my own personal experience, I can say that the irritation of the respiratory mucosa to ether inhalation is practically entirely suppressed by antecedent mentholization. I was able to take deep inspiration almost immediately from the first, and believe that mentholization not only relieves cough and vomiting in the progress of operation, but also that the subsequent vomiting is less persistent and serious in its character. I believe, too, that slight operations can be done by the so-called Rausch method, that is, by the rapid administration of ether under the first effect. In this way many slight operations are done without full etherization, and I believe this can be done better by the method I have proposed.

SYNOVITIS.

Dr. W. A. Briggs: Dr. White has introduced a very important subject, and, while I have nothing in particular to add in the matter, I desire to state that I have had two cases of synovitis, in which guaiacol was used successfully. It seemed to relieve inflammation and promote absorption. About two months ago I had a very severe case of traumatic inflammation of the knee-joint, with an extremely large effusion. I proposed aspiration, but the patient declined, and I then ordered an application of guaiacol. I then proposed to put on a plaster cast, but this was also objected to. On my next visit I noticed that there was an evident absorption of the liquid, so I delayed applying the cast, and in two weeks the liquid was cleared up by absorption. I recently saw a case in the practice of another physician, and, while it is as yet too early to report, I am informed that there was evident absorption when the guaiacol had been applied only 48 hours. Guaiacol, however, should be used very carefully, as it has a remarkable effect upon the temperature, and if too much of it be applied might produce collapse. I recently had a case with high temperature—104 degrees— in which I used phenacetin without result. I then applied 15 minims of guaiacol every three hours, and in this way kept the temperature down to 101 degrees. In both cases referred to it was used locally over the joint.

Dr. J. A. McKee: Three years ago a young lady, who was riding on a bicycle, suddenly fell and struck upon her knee. She was put to bed, and her physician advised that she be kept in bed for a number of weeks. The knee was bandaged, and she was given to understand that she would get all right in time. It is now about three years since the accident occurred. A few days ago they called at my office, and drew my attention to it. I was aware that the tendon that connects the patella with the tibia had been separated. By this time I expect the tendon is absorbed, and an operation can not be done successfully. She is now 18 years of age. She has to be very careful when going up and down stairs.

SHOCK AND AMPUTATIONS.

Dr. G. L. Stevenson: Quite recently I spoke before this society on double amputation during the period of shock, even profound shock. I reasoned in this way, that two crushed legs are a shock, producing conditions much more severe in character than that which attends the necessary surgical operation, especially so when the patient is suffering from such crushes as are met with in railway work. They are usually open to infection from the beginning, and it is surprising how quickly the systemic effects of sepsis make themselves manifest, how quickly we get rapid pulse, elevation of temperature, sweats, pallor, etc. The degree of shock is always augmented by this shock-producing condition. Some have advised tiding the patient over primary shock, that is, the shock attending the injury, before attempting a surgical operation. I have never yet seen a patient recover from such shock by any treatment, and it is undeniable that they invariably improve after the removal of the crushed legs. So I strongly advise immediate amputation in preference to waiting for what may never occur, a more opportune time.

One of our latest patients of this type came in at midnight last Saturday, and was reported to have been lying alongside the railroad at Davisville for two hours in the rain before he was found. He was brought to Sacramento, taken to the receiving hospital in the patrol wagon, and brought thence to the Railroad Hospital. He was suffering from profound shock, being almost bloodless. His pulse was not constant enough to enable one to count the pulsations for half a minute at a time; skin deathly white; eyes lusterless; respirations shallow and irregular; lips and gums colorless; body covered with cold, clammy sweat; total unconsciousness. We talked the case over, and decided that if left in that condition it would certainly terminate fatally. We finally decided to amputate the legs about the middle of the thigh. We put him on the table, cleansed his limbs as well as possible, and amputated both legs at the joint before mentioned. We also removed two fingers and one thumb. To show the degree of shock the man was in, it required two ounces of ether to perform that operation. He regained consciousness at 2 P. M. the following day, and told me the last thing he remembered was being on the train at Vallejo. The operation was followed by infection, rapid pulse, and temperature ranging from 102 to 103 in the afternoon. I gave him 30 cc. antistreptococcic serum, and to-day his temperature is normal, and I believe he is on the fair road to recovery. We also have another case of double amputation below the knees, which is doing well, although he suffered for a couple of days from shock. It is not necessary to say that these cases require stimulations to the highest degree. Strychnia and salt solution subcutaneously, whisky and strong black coffee by the bowel is the best method for most cases.

Regular Meeting, April 22, 1902.

The president, H. H. Look, M. D., in the chair.

REPORT OF CASES.

Dr. E. W. Twitchell reported a case of hysterical paralysis of all four limbs and of the muscles of the larynx, accompanied by unilateral photophobia and suppression of urine in a 16-year-old boy.

TUMORS OF THE NECK.

Dr. J. L. White read a paper on this subject.

Dr. W. E. Briggs: I have had no practical experience in the treatment of these tumors that the author has described in his paper tonight. I see a great many of them, and I always tell them to return to their physician, and to follow out the treatment suggested by him. I have seen a number of them recover under treatment. It seems to me that the surgical treatment is not quite as generally adopted at present as it was some time ago. I am unable to say as to how large a percentage of them should be operated upon at once, or when it is necessary to operate upon them, but I am of the opinion that it is worth while, in certain stages, even in tubercular glands in children, to try treatment. What I want to say is, as regards prophylaxis, that physicians can do a great deal towards preventing these glands, if they will pay attention to their little patients' throats. I think there will be much less glandular trouble in the neck than there has been. I am convinced that nearly all the infection of the glands comes from diseased tonsils and adenoid growths in throat or nose. What I wanted to bring before this society is the importance of the proper treatment of glands in children. I think the subject is worthy of the attention of the society.

ELECTION OF OFFICERS.

Dr. H. H. Look was duly elected president of the society for the ensuing year.

Election of Trustees: Drs. G. L. Simmons, H. L. Nichols, and W. E. Briggs were duly elected trustees for the ensuing year, the president and secretary also to act as ex officio members.

Drs. Henderson, James, and Twitchell were appointed as a committee to take up and read certain correspondence in relation to the future advancement of the society, in the way of having members of the profession become more united.

A motion was made by Dr. Henderson, seconded by Dr. Parkinson, to the effect that Dr. Nourse be made an honorary member of the society.

Dr. W. H. Baldwin made a motion that the society ought to subscribe an amount such as would cover all reasonable expenses of the society during the coming year, same to include expense of stenographer for taking minutes of each monthly meeting.

Regular Meeting, May, 1902.

NEW INVENTIONS.

Dr. W. A. Briggs presented to the society a tuning-fork, there being two different sizes, for dilimiting certain internal organs and cavities, which he claims can be done more easily and quickly than by older methods now used. By auscultatory percussion it is oftentimes difficult to arrive at a conclusion as to the exact limits of the stomach; so with auscultatory friction, as recommended by Bianchi. Filling the stomach with carbonic acid gas, etc., is troublesome, and produces abnormal conditions; it distends the stomach and possibly displaces its limits to a certain degree. The X-ray method of examination is difficult, and annoying to the patient. If the stomach is filled with bismuth solution, it becomes displaced, more or less, and I must confess that, in dilimiting the stomach in this way, the screen does not give me a satisfactory result. A short time ago it occurred to me that by using the internal organs as sounding boards we might accomplish this purpose more easily and quickly. I have been experimenting for several weeks with this instrument, and I shall now present it to the society. My method of using it is as follows: Take a stethoscope and place it over the organ you desire to dilimit, then place the tuning-fork in position, and then, relieving the hammer with the thumb, moving it back and forth, you will, in a short time, discover the limit of that organ, particularly if the stomach be moderately distended with gas. If the stomach be free from gas, of course, you get a different sound, and not so certain, but, under ordinary conditions, you can distinguish the limits easily and quickly. I have two forks; one with a high note, which costs fifteen cents. I think the larger one, with a lower note, is better for some purposes; for instance, where you want to elicit a deep sound, where you want to sound the liver, where the lung overlaps, the sound is deeper and more vigorous, and therefore you are more likely to elicit a sound from the lower structures.

Dr. W. J. Hanna: How about hypertrophied heart?

Dr. W. A. Briggs: I think you would have no difficulty; bony structures do not seriously interfere. I have diagnosed and dilimited a cavity of the lung by this means easily and quickly, also a pneumo-thorax, and confirmed them both by an X-ray examination.

LA GRIPPE—ITS TREATMENT.

Dr. W. E. Briggs: Dr White has truly said that a treatise on the treatment of la grippe and its complications would embrace a large part of the practice of medicine. The epidemics that I have observed within the past twenty years have been a fruitful source of ear disease, and not an uncommon cause of eye and throat trouble. It is about twenty years ago that the term "la grippe" was applied to the disease in Paris. Undoubtedly the same disease had existed before, but the term "la grippe" seemed so appropriate for the aggregation of symptoms that it followed it as it spread west. The cause of the disease has been traced to a germ, which first invades the mucous membrane. In my line of work I see many secondary infections due to la grippe. During these epidemics, middle-ear complications are common, and disease of the mastoid cells is much more frequently encountered than at other times. I believe that it is well to give especial attention to the catarrhal symptoms, with the hope of preventing some of the more serious secondary troubles.

Dr. J. A. McKee: I have suffered from lumbago myself frequently. One of our bankers here told me he suffered from it for some years, and had been wearing a red-flannel pad across his back. I thought it was very reasonable. I resorted to the same means, and have been wearing a pad of flannel over the lumbar region, outside my undershirt. The wearing of a pad is no doubt beneficial, as that part of the body is not well protected, for the reason that vests do not fit tightly across the back. Some few days ago I took off the pad, and in a day or two afterwards I was suffering as before. I commenced to wear the pad again, and find myself better. I think the theory is to keep up warmth across the lumbar region, where we are not well protected.

Dr. J. E. Poore: During the epidemic of la grippe in 1890 I noticed that a very large quantity of the coal-tar products were used, especially antipyrin; it was given as a specific at that time, and considerable damage was done. I think in asthenic cases depressants are injurious; the better plan is to stimulate judiciously. The fever that comes on with la grippe is doubtless an attempt on the part of nature to throw off the disease, and I think that by resorting to antipyrin and ascetanilid one defeats the attempt of nature to cure the complaint. With regard to the use of pads, in India pads are used as a protection against the changes of temperature, and great benefit is derived from them in the way of preventing lumbago and bowel complaint.

Dr. H. E. Wright: In my own case, which was quite severe, I applied heat thoroughly to the back, and partook of hot drinks, quinin, and brandy, and in two or three days the disease was pretty well broken up. My treatment is stimulants, heat combined with rest in bed, and nourishing liquid diet, and with the temperature of the room about 72 degrees. In regard to pads: I am opposed to them; I believe they are contraindicated. I think the suggestion made by Dr. McKee in regard to wearing a flannel pad over the lumbar region is an excellent one, protecting, as it does, that portion of the body left exposed by the clothing, thus correcting a defect in the ordinary wearing apparel.

Dr. W. A. Briggs: All of us have, no doubt, received copies of the "Medical Brief," in which is contained a department devoted to queries and answers in regard to the treatment of various diseases. A few days ago I glanced over that column and counted up the various remedies prescribed for some ten diseases. I believe they numbered about twenty-five, twenty-one of them being proprietary remedies, antikamnia being one of them. It called my attention to what seems to be a very serious matter in the medical profession, and I rise to speak chiefly of this one matter, for the reason that the author of the paper of the evening called attention to two of these remedies, whose formula is secret, and which, it seems to me, no member of the medical profession should use. If I should make any criticism of the paper, it would be in this regard.

Regular Meeting, June, 1902.

ANGINA PECTORIS.

Dr. H. E. Wright read the paper of the evening, entitled "Angina Pectoris."

Dr. J. L. White: I desire to mention in this connection a patient who recently came under my care. He was about 40 years of age, accustomed to hard work, and had lately been working in a hay field. On examination found he had mitral regurgitation and arterio-sclerosis. His attack came on in the afternoon, lasting about ten minutes. He was in the hospital about two weeks, and never had a recurrence. During the attack the usual remedies, amyl-nitrite and morphin were used. His subsequent treatment was iodid and arsenic. In regard to spinal anesthesia with cocain, I have used it many times at the county hospital. Vomiting occurs in about 25 per cent of the cases on the table. We have not had persistent vomiting at any time, and severe headache followed in only two cases. Dr. Morton puts cocain into a sterilized syringe, inserts the needle, and draws off enough spinal fluid to dissolve the cocain. After the cocain is dissolved, he injects the fluid immediately. He claims to get anesthesia in from 8 to 15 minutes. We have used cocain on several subjects when the operation was above the point of injection, but with perfect success only on two cases.

Dr. E. W. Twitchell: There is a marked difference between true and false angina. True angina is a distinct pathological entity. There is usually demonstrable post-mortem arterio-sclerosis and stenosis of the coronary arteries. The symptoms can be separated from those of the false anginas. In the first place, true angina does not occur in the young, occurring more in people of middle age and of advanced years. True angina comes on differently from the false angina. The true form comes on from marked effort, as from stooping. It is rarely that true angina comes on at night; those which come on at night are usually false. The length of the attacks is different; in true angina they are short. False anginas, for the most part, are hysterical, coming on from fright, oftentimes spontaneously, and may last a long time. From a prognostic standpoint, the matter of diagnosis is important. If you are satisfied you have false angina to deal with, you have not much to fear; if it be true angina, your patient may die. Tobacco angina simulates hysterical angina, but lasts longer. A patient having an attack of tobacco angina may remain unconscious all night. I recently came across a case of genuine hysterical angina, that closely simulated true angina. It took me several days to make up my mind as to the existing condition. In the true angina you have to offset the ill effects of the arterio-sclerosis, and reduce the blood pressure. For long-continued treatment the iodid of potassium is best. Attention should be paid to dieting your patient, with a view to reducing blood pressure. Meats that are kept in refrigerators should be excluded, on account of the ptomains contained therein. Such patients should be put on a milk and vegetable diet. Blood pressure must be kept down, otherwise you are liable to have cardiac ischemia.

Dr. McKee: I have never got as good results from ascetanilid as from antikamnia, until I came to Sacramento. I put up my own medicine, and patients have remarked to me that they were not getting the same medicine as on previous occasions. I have tried both, but I do not get as good results from ascetanilid as from antikamnia.

THE THIRD STAGE OF LABOR AND INFANT FEEDING.

Dr. F. L. Atkinson read a paper entitled "The Third Stage of Labor," etc.

Dr. F. B. Sutliff, in opening the discussion, said: Speaking of the nurse, I suppose the author meant the old woman in attendance, who is usually not a nurse at all. She has her own plans, and will tell you how many she has raised, and that settles it, and in most instances it will be about as the old woman recommends; and usually the first thing she gives the little fellow is gin, which makes him promptly drunk, and then she will say he is a good baby. When he sobers up, he is usually not so good, and is given a little more gin. The old-fashioned sugar-tit is also resorted to. In regard to a diet for the child, in case the mother does not or will not nurse the child, my preference is cow's milk, giving equal parts of boiled water, cooled, and sweet cream as a laxative. The author did not mention one thing that makes women dread to nurse the child, and that is sore nipples. Great care should be taken of the nipples, to see that they are kept in good condition. I have seen them bleed. The toilet of the nipple should be attended to carefully, using borated powder, and applying a good nipple shield. After that time has passed the mother will be more likely to nurse her infant. When it comes to choosing artificial food there is trouble. If we could always get certified milk, I think almost all of us would choose cow's milk. There are a few homes where the milk is taken care of properly after it has been delivered. A good way to handle milk would be, as the old-fashioned people say, to set a pint of milk and take off the cream, saving it; then add a little rennet, curdling the milk, straining off the whey, saving the salts; add the cream and the whey to another pint of milk, and you have a good mixture, and have not robbed the milk of any of the salts, robbing it only of the casein. Condensed milk I have not taken kindly to, but once in a while I see infants heavy and stout and seemingly in good condition, when I hesitate to tell the mother to change the diet. I think it is a good plan to let well enough alone. The objection I have to condensed milk is the amount of cane sugar it contains. I believe it leads to colic, fermentation, and other troubles. In regard to the green stools mentioned by the author: I do not think it is a good idea to change the food, but instead add a little dilute hydrochloric acid, which acts nicely, and the discharge becomes better in color, and the trouble is gotten over without much medication. Peptonized food a child should receive only when it is absolutely necessary, to correct the fault you are trying to combat. He spoke of the old-fashioned flour-ball, of boiling and then baking food in the oven, by which means the starch was modified—Imperial Granum. In regard to weaning: I think can be safely weaned from 7 to 9 months. I do not believe it is good for the mother to suckle the child too long, and a little care and intelligence on the part of the mother will enable her to wean her child from 7 to 9 months. I agree with the author that milk taken from a whole herd is better than one cow's milk. Of course, if you know the cow, are certain she is in a healthy condition, that is another thing.

Dr. W. A. Briggs: At first blush one would think that extrauterine pregnancy should occur amongst the lower animals with the same frequency as in the human female, but when we think of the etiology of extrauterine pregnancy, the inflammatory conditions of one sort and another, frequently gonorrhea, we shall come to the conclusion that, very likely, in the lower animals this would be a rare condition. It would be interesting to follow the matter up, and ascertain whether such conditions are frequent, by consulting standard works on obstetrics in the lower animals.

Dr. H. H. Look: Some time ago I was called in to attend to what was really a midwife's work, after a case of confinement. Upon examination I found that the womb had formed in two balloon-shaped sacks, one above the other, and it is a question whether due to extrauterine pregnancy or not.

Dr. W. A. Briggs: Those of you who have had the pleasure of reading Maeterlinck's charming book on the "Life of the Bee" will call to mind the parallel that may be drawn between man and that insect with an almost infinitesimal brain, not always perhaps to the credit of man, either. The almost perfect social economy which has been developed by these insects, which far exceeds our own social economy in perfection, is certainly remarkable. There is another thing which has struck me forcibly, and long before I read Maeterlinck; this parallel came up in my mind a good many times: The ovum of the queen and the worker are identical, and up to the third day of life they are under identical conditions. After the third day, however, the worker larva is fed on coarser food,—honey and pollen,—while the queen larva is fed upon different food altogether, more carefully prepared, a nectar, as it were, and fed in that way until a certain period in existence, when she feeds herself. That difference in feeding makes all the difference between the queen and the worker. The queen lives five or six years, and is a fully-developed female, while the worker lives only seven or eight weeks, and is an abortive female; in other words, we have three genders in the economy of the bee, namely, male, female, and neuter. Now, we are developing in the human race the same thing; we are developing an abortive female—an abortive form of mankind—which, if it proceeds sufficiently far, we shall be compelled to call "it," as in the case of the worker bee. The more we study the pathology of the human race, the more we find that we are developing a third gender in our race, corresponding to the third gender among bees. Women nowadays, in large numbers, are on the way to this third gender; hesitate at marriage; hesitate still more at maternity; and, if possible, yet more at nursing their unwelcome offspring. We shall have to develop a complete woman in order to make a complete mother, and it seems to me that we, as physicians, should exert our influence in this direction. Then, as Dr. Sutliff says, many women who are fairly-well developed have a strong prejudice against nursing their infants. This arises, no doubt, in part, from social reasons; it arises also, in part, from another cause, incapacity, and this has increased very much within the past 50 years. This is exemplified by the multiplication of infant foods and by our own observation of the number of women that are averse to nursing or are unable to nurse. It is not always the mother's fault. We should, as far as possible, persuade women to nurse their infants. By doing the best we can in these directions, a large majority of women will nurse their children. If we can get them to nurse for a month, we will have accomplished a good deal; if for three months, we will have accomplished much more, getting the baby on a safe basis, particularly if the end of this period be in the early part of the fall. When we come to this contingent of women who can not nurse their infants, we have two things to look to: First, the selection of a proper and suitable food, and, secondly, the prevention of gastro-intestinal infection. Of course, these two conditions are practically combined in one. In regard to the milk supply, Dr. Henderson has struck the key-note when he spoke of cleanliness; from the cow's udder to the baby's stomach, all along the line, cleanliness. We expected a great deal a few years ago from sterilizing, and yet we have had a disheartening failure in this respect, except in rare instance or for a brief period. Speaking from a considerable experience, I believe that the use of cereals, and particularly rolled oats, is one of the most important means of modifying baby foods we have, and particularly that form of rolled oats that has been heated and prepared for human food; the starch is more easily digested. Barley approaches it in digestibility, but wheat falls considerably behind. It furnishes a large percentage of fat and proteids; is easily and quickly prepared; found everywhere; and is cheap. It seems to me it is an ideal modifier of cow's milk for infant food. It furnishes what is lacking in cow's milk, that is, the actual or potential saccharin element, and takes the place of milk sugar. My experience warrants me in believing that cane sugar is better than milk sugar we usually get on the market here, and this is the opinion of Jacobi. When you tell people to get milk sugar, they very likely get an adulterated article. It is of low sweetening power. The starch of the grain answers the purpose of milk sugar in nutrition, and all the actual sugar needed is to make the food palatable for the child. Cane sugar in concentration is objectionable, but used simply to make food palatable it does not impair digestion. I object to almost all forms of prepared artificial foods, and particularly to condensed milk. Infants sometimes seemingly thrive on them, it is true, for a time at least. The word "seemingly" has a particular significance here, as the results are "seeming" and not real. Children fed on such food often look plump, on account of being fed on a large quantity of sugar, and where this sugar is assimilated, it of course produces a rapid development of fat, and the child looks well, but a day of reckoning comes in the form of scurvy, rickets, etc. I have seen many cases of these diseases since the general introduction of artificial foods. Of course, there are other artificial foods that are in some respects better, but I think if we keep our eyes singly upon cow's milk and its modification, or upon oatmeal and its modification, we shall do far better than by the use of any of these foods. In infant feeding we can not lay down hard or fast rules; we must adopt a food to the digestive power and demands of the child, and we know that oftentimes experimentation with infant feeding taxes the observing power of the physician to the utmost. With regard to peptonizing processes, I have used Richardson's and lately Fairchild's diazym with good results. This digests the starch and modifies the casein. I have found it essential in certain gastro-intestinal infections to give rolled oats for several days, giving no proteids, except those contained in the rolled oats itself. A few years ago I had a very instructive case, in which I put the child on rolled oats, and forgot to see it for three months afterwards. The child was in excellent condition on the rolled oats alone. This shows that rolled oats do contain the elements which are necessary for the nutrition of the child to a considerable degree of perfection.

Dr. H. L. Nichols: When the health of the mother is good and the diet is what it should be, there is nothing better than mother's milk. There are times when a mother is unable to nurse her child, and in such a case there is nothing better than milk from a healthy, well-fed cow. My preference in this respect is to have the milk stand and take off the cream, dilute with boiled water, and sweeten with sugar of milk or cane sugar. This, I think, makes the best substitute for mother's milk. Babies should be allowed to nurse as early as possible. While, of course, they do not get much, they get a substance from the breast that is good for them.

SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Regular Meeting, July, 1902.

The president, Dr. J. C. Spencer, in the chair.

ARE VENTRO-FIXATION AND VENTRO-SUSPENSION OF THE UTERUS JUSTIFIABLE OPERATIONS?

Dr. H. Kreutzmann read a paper with the above title, and concluded that these operations were not advisable.

Dr. E. Rixford: I came in too late to hear the first part of the paper, but as I gather from what has been said, Dr. Kreutzmann took strong ground against ventro-suspension. In this I am very ready to agree with him. My personal experience has been small in this field, but it has been so discouraging that I have entirely given up the operation. In one case, in a woman of fifty, with beginning prolapsus, I got satisfactory union, with relief of all symptoms for a year. At the end of this time she lifted a heavy trunk, and pulled off the suspending ligament, and had recurrence of the retroversion and prolapse. In another case, in a young woman, I performed ventro-suspension, following the technic of Kelly. She had relief of symptoms till she became pregnant, when she suffered great pain, and had other trouble, requiring premature delivery. The attendant found it impossible to deliver the child, and performed craniotomy. The patient did well until again pregnant, when the same thing was repeated, and still a third time. In speaking of the operation of ventro-suspension, Mayo, of Rochester, Minn., said that a good deal of our surgery is for the purpose of removing adventitious bands in the abdomen, and it would therefore seem to be very poor surgery to deliberately go to work and make such a band. Dr. Kreutzmann spoke in favor of the Alexander operation, and in this I would also support his position. The chief objection that has been urged against the Alexander operation is the fact that certain statistics have shown a considerable number of hernias following the operation. Hernia is here dependent on two things: First, suppuration, and, secondly, drawing of the peritoneal covering of the round ligament into the inguinal canal, making a pouch or infundibulum, which becomes the starting-point of a hernia. Both these may be avoided; the first by a proper aseptic technic, without which one does wrong to operate on such cases, and the second by taking pains to push back the peritoneum as it is drawn out. Failure when due to other causes is often explained by failure to draw out the intra-abdominal portion of the ligament, i. e., the operation is sometimes performed without opening the canal, stretching the portion of the ligament which is in the canal without shortening the intra-abdominal portion.

Dr. A. W. Morton: My experience with abdominal fixation is limited to ten cases. In five of these there was afterwards pregnancy, and no inconvenience as a result of the operation. There are some objections to producing adhesions between the uterus and the abdominal wall, but it is a simple method, and I have found it very satisfactory. I am surprised to hear so many serious complications reported. When it is necessary to open the abdomen, I prefer the Alexander operation.

Dr. E. G. Frisbie: I have had only a limited experience with this operation; however, I think the paper is worthy of very serious consideration. Retroversion does not necessarily give rise to troublesome symptoms, and we meet such cases frequently. If we believe the symptoms, it is all right. Of course, if a woman knows she has retroversion, it will cause mental discomfort; but if the physician removes the other conditions, a large percentage are rendered as comfortable as possible. With regard to fixation, I have made both vaginal and ventral in a few instances, and in no case has a pregnancy ensued; hence I have no personal experience with complications in confinement following fixation.

Dr. C. F. Griffin: I have had just such a case as the doctor speaks about under observation for eight years. Ventro-suspension was done by one of our most able surgeons, following the technic of Kelly. The woman is 34 years of age, married, and had had four normal pregnancies before the operation eight years ago, which was done to correct retroflexion. She remained relieved of symptoms for one year. Pregnancy occurred, and then pain radiated over the abdominal cavity during the whole period of gestation. These pains were agonizing. Pregnancy terminated at the eighth month, position transverse, and confinement was most difficult. Before that they were all vertex presentations. After this pregnancy pains continued for sixteen to eighteen months. Then she had two pregnancies terminated at the eighth month, and, like the first one, they were also transverse presentations. Two years later she was operated upon for appendicitis, and during the operation I saw the utero-abdominal band; it was one inch long, lay between the top of the uterus and the abdominal wall; there were no other adhesions, and I can see no reason why a loop of the intestines could not slip under this band and become strangulated. Following this operation there was another pregnancy, terminating, as before, at the eighth month, with a transverse presentation, requiring version and forceps delivery. So that not only the reports in the literature, but also my experience have prejudiced me against the operation.

Dr. C. E. Farnum: I understand the author of the paper to state that displacement of the uterus causes no unfavorable symptoms, requiring operation. Then why substitute the Alexander operation for ventro-suspension?

Dr. Rixford: I rose to say what Dr. Farnum has just now said, viz., that the statement of Dr. Kreutzmann that the uterus can be in any position without causing symptoms per se should not go unchallenged. We have all had experience in this matter, I am sure. A patient of mine with a retroverted uterus became pregnant, and at about the third month had a miscarriage, and later another, presumably from the same cause. When pregnant for the third time, she came under my care, and I kept the retroverted uterus in place with tampons for a month or more, at the end of which time the uterus was large enough to maintain its proper position. She went on to full term, and had a normal delivery. I know of three similar cases, two in my own practice. It is scarcely proper to make an exception in the case of pregnancy. Reverting again to the Alexander operation, it may be admitted as a valid objection to the operation that it is suitable only for cases in which there are no adhesions or disease of the adnexa. When, for such complications, the abdomen has to be opened, any method of shortening the round ligaments will do as well. I regard it of great importance in all intra-abdominal operations on the female genitalia to place the intestines well down behind the uterus and cover them over with omentum.

THYROID EXTRACT IN GYNECOLOGY.

Dr. J. C. Stinson read a paper with above title. [Published at page 328.]

Dr. George Adam: In order to understand the therapy of a medicinal agent, it is essential that its action on healthy tissue be known. In this case the physiologic action of the agent may be assumed to be, in part, similar to the function of the thyroid gland. What is this function? I will postulate the following: The function of the thyroid is the production of ions which are impressed into blood elements, which reenter the circulation and unload the ions at distant parts of the body. What are the ions?—They are molecules produced by dissociation of other molecules, having supernormal potentials and subnormal dimensions. At the moment of dissociation and within the construction of other molecules, ions correspond to chemic atoms. We can, by means of an electric current, split up sodium chlorid into chlorin and sodium, and the latter are termed ions. Now if we get the conception that the action of all cells is accompanied with the production of ions, we can clearly see what is the function of the thyroid gland. The ions are chips broken off the main cell,—molecule,—and represent the amount of work done when the cell is functionating. The interior of the thyroid gland, by the action of its single layer of cells, is filled with ions, and through these blood elements pass. This is shown by blood elements being found in the colloid substance. Further, the colloid substance has been found in the adjoining lymphatics. Hence osmosis takes place from the blood-vessels, through the gland, to the lymphatics. By means of pressure within the gland the ions are impressed into the constituencies of certain blood elements, thus raising their potential; and these, like loaded ships, pass through the lymphatics into the general circulation, and unload their potential (ions) at distant circulatory ports, supplying nutrition to nerve and muscle. These blood elements are potential carriers, and are essential to the maintenance of the equilibrium between anabolic and katabolic processes. There is no doubt but in neurasthenic and other conditions occurring in connection with pelvic diseases the balance in the physical economy is disturbed toward katabolism. The question arises, Can the extracts of thyroid when administered enable the balance to be recovered? Can the extracts perform a similar function to that which is performed by the gland? that is, to build up depleted cells, that have been deprived of their potentials by means of action or overaction. It has been suggested that the ovaries and testicles perform similar functions to that of the thyroid. There is no doubt but they have similar functions as far as the production of ions, but these ions are differently disposed of. However, by reflex and ulterior action through the nervous system, the ovaries and testicles may produce anabolic changes of a similar character to those produced by the thyroid. The following tabulation shows the fundamental difference in the action of these organs.

The term "ion" was introduced by Faraday, and was meant to denote the results of electrolysis. Ions represent force spent or transformed. The term therefore is applicable to elements produced by cell action, whether in

GLAND DIFFERENTIATION.

	Thyroid.	Testicle.	Ovary-Graafian Vesicle.
Osmosis.	From blood-vessels through cell to lymphatics.	From lymphatics to tubules.	No osmosis. The pressure is from within outwards, owing to the production of ions.
Nerve endings.	Epithelial cells in vesicle.	Endothelial cells bounding lymph spaces.	Epithelial cells in vesicle.
Ions produced by nerve action.	Act on blood elements.	Act on lymph.	Act on ovum.
Results.	Blood elements built up in potential by ions and passing into the circulation.	Reactions between ions and lymph salts produce elements which build up epithelial cells and cause their division, the cells passing into the tubules.	Ovum is built up to a high negative potential. The ovum does not multiply, owing to absence of blood elements.

nerves, muscles, or glands, and is bound to come into general use in designating the transformation of force during physiologic action. It has been claimed that the conception of the physiologic ion is not supported by the facts of the laboratory, and that it is theoretical. Let me call your attention to the relationship of theory and fact as they exist in the mind of the investigator. The tendency is to worship facts. The energies of his life are devoted to the discovery of one. When he discovers it, he triumphantly announces the event, and expects his name to be attached to the fact. Then he proceeds to construct a theory which suits his fact, but which is contradicted by other facts. Now I say that this chiefly characterizes our textbooks of to-day. The student is deluged by myriads of facts and theories, and it is no wonder he dreads the board of examiners. Nevertheless, some of the most important facts have been discovered only to be forgotten, and we have to look for them in the older works. It is not facts we want, but a classification of facts. We want a generalization that will include all facts, whether electric, chemic, physical, physiologic, or pathologic. We want a theory that no fact will dispute, so that when a student masters it, he masters all. The conception and application of such a theory will call for the highest imaginative powers.

Dr. S. J. Hunkin: I understand that the author said, in regard to the action of opium, that "it does more harm than good." Of course Dr. Stinson knows the result of *his* treatment, but I challenge any statement like that. In its place there is no other drug that God gave us that will give us the satisfaction that that gives us at the proper time and place, and if Dr. Stinson gets more "harm than good" out of it—well, he ought to know the results of his treatment.

Dr. J. C. Stinson: Regarding the use of opium for relieving pain, I agree with Dr. Hunkin as to its value for this purpose, but, as I said before, it must be used with great care in dysmenorrhea cases, as they are very susceptible to opiates. All authorities agree on this point. In using opium to relieve pain, I always am careful in my practice to avoid informing my patients what they are taking, and, should they try to corner me as to what drug they are using, I prefer to state that it is codein or heroin, rather than use the word opium or morphin. Now in thyroid we have a remedy that relieves the pain of dysmenorrhea cases better than morphia, without any of the latter's bad effects or danger of producing drug habit. Dr. Caglieri's two cases are interesting. The cause of sudden death in these could be reasonably explained by the first patient having a fatty heart, or death ensued by acute toxemia due to old thyroid tablets; and the second also from acute toxemia from old decomposed tablets. Personally I never use thyroid tablets, as one never knows how old such tablets are. Of course there are contraindications against thyroid extract in gynecology, as in general medicine, and they are the same; briefly, thyroid should not be given to those ill with heart lesions, tuberculosis, albuminuria, and glycosuria. I have listened to Dr. Rosenstirn's funeral oration with much pleasure. If the doctor had had his ears open while I was reading my paper, he would have heard me state that I first used thyroid extract in April, 1901, and since then have used it repeatedly in dysmenorrhea cases with nearly perfect results, affording nearly perfect relief in over 80 per cent.

THE PRESENCE OF IODIPHILE GRANULES IN THE BLOOD AND THEIR CLINICAL VALUE IN SURGERY.

Dr. G. E. Caglieri presented the above paper. [To be published.]

Dr. H. Harris: I would like to ask if you examined any patients with diabetes mellitus?

In this condition leucocytes often show round bodies, staining brown with iodine, supposedly made up of glycogen.

Dr. H. Ryfkogel: My experience with this reaction has been rather limited. It has, of course, been observed for twenty years or more in pernicious anemia, leukemia, etc. I have seen but two cases in which the presence of the reaction influenced the diagnosis. One was a case of obscure pelvic disease, with a slight hyperleucocytosis. There were, however, numerous iodiphiles in the blood, and for this reason an operation was performed, and an abscess discovered. The other case was a man, whose illness began with a chill, severe pain in the abdomen, and a temperature of 102½ degrees. This was followed by sweating and a fall in temperature. The leucocyte count at the time was 3,600; 14 hours later it was 30,000, but there were no iodiphiles in the blood. There was an immense amount of indican in the urine. The surgeon did not think there was any suppuration, and the lack of iodiphiles was corroborative evidence. The case went on to rapid recovery without operative interference. The case was probably one of ileus. I have seen the reaction in a number of cases of appendical abscess, in which the diagnosis was readily made by the clinical examination.

Dr. J. M. Moss: I would like to ask from a practical standpoint, Is this reaction of sufficient importance to look for? There is a dispute whether or not it occurs in healthy blood, and we find it occurring in many different diseases, where the diagnosis is easily made by other means. In other diseases we may find it present or absent or indifferent, and is it of any practical benefit, or is it only a pathological curiosity?

Dr. E. Rixford: I have no special knowledge of the iodiphile reaction, though I was much interested in the presentation of the subject. I might add, however, a word on the question of whether the granules which stain with iodin are glycogen or not. We know that glycogen is soluble in water, and to such an extent that liver and kidney sections taken from a person who has died of diabetes, in coma, for example, must be examined soon after death, else the glycogen will be dissolved out by the body fluids. It must not come in contact with aqueous fluids, but must be hardened in absolute alcohol. Stained with iodin and iodid of potash, in thick mucilaginous solution the glycogen granules take on a brilliant brown color. If the iodiphile granules in the blood cells are of the nature of glycogen, we might expect such discrepancies in staining as have been reported due to differences in technic in the matter of exposure of the cells to aqueous fluids.

Dr. Ryfkogel: I would like to say something in reply to Drs. Moss and Rosenstirn's remarks. The clinician frequently expects an absolute diagnosis from the microscopist, when he can, at best, by furnishing an additional symptom, throw some additional light on the case. The iodiphiles, like the leucocyte, is not a pathognomonic sign of suppuration. It is, however, a valuable guide, that not infrequently may decide a doubtful diagnosis.

STATE MEDICAL SOCIETY SUPPLEMENT.

[The following discussion of the papers of Drs. Southard and Crowley by Dr. Pischel, which was inadvertently omitted from the society's report, is produced here, that the record may be kept complete and the error corrected.]

In the discussion of the paper on the "Suture of Tendons and Muscles," by Dr. D. D. Crowley, Dr. Kasper Pischel said: For sutures of small tendons, in the hand, for instance, I would like to suggest to you a suture material which I used lately in my eye work exclusively, to my satisfaction. This material is very fine, strong, and absorbable; the only drawback of these sutures is that they are rather short, about six inches. I have overcome this difficulty by making the knot with pincers. These sutures are the tendons of rat tails (the doctor passed around several bottles with such sutures). Their preparation is very simple. Any porter of any down-town business house will procure you any amount of rats. With a strong pair of scissors you can sever the tail at its root. The skin comes off easily. Cut off less than an inch of the tail end, and you will be surprised what a quantity of fine, silk-like, glossy tendons you can draw out. I put these tendons in 1 per cent formalin for a week, then in 3 per cent carbolic acid solution. They are usually absorbed in about a week. By chromatizing them you certainly could make them as resistent as you want. I could not use the sutures right out of the formalin, because they created an irritated nodule, lasting several weeks; this was probably due to the irritating effect of the formalin. That was the opinion of Professor Flexner, of Philadelphia, whom I asked about it when he was here.

"The Turbinates," by Dr. W. F. Southard, Dr. Kasper Pischel said: I am sorry to say I was not so fortunate as Dr. Southard regarding hemorrhages after operations on the turbinates. It happened several times that several hours after the operation I was urgently summoned to the house of the patient, as he "was bleeding to death." To avoid such occurrences, I tried different methods. One of the best was the use of small strips of gauze, soaked with ferropyrin. Dr. Simpson's intranasal tampons, made by Johnson & Johnson, served the purpose of preventing hemorrhages, but the treatment was worse than the disease. The moisture of the nose makes the compressed tampon swell up to twice or three times its size; this constant pressure, while preventing a hemorrhage, causes frequently such enormous pain that the patient can not sleep. The removal of the tampon is painful too, therefore I have discarded them. During the last six months I have adopted a method which has been so far entirely satisfactory. As soon as I am through with the operation I drop on the wound collodium, which forms a firm membrane, thus preventing bleeding without interfering with the breathing; as this cover does not touch the septum, there is no irritation. After a few days this membrane can be taken off; frequently it falls off by itself.